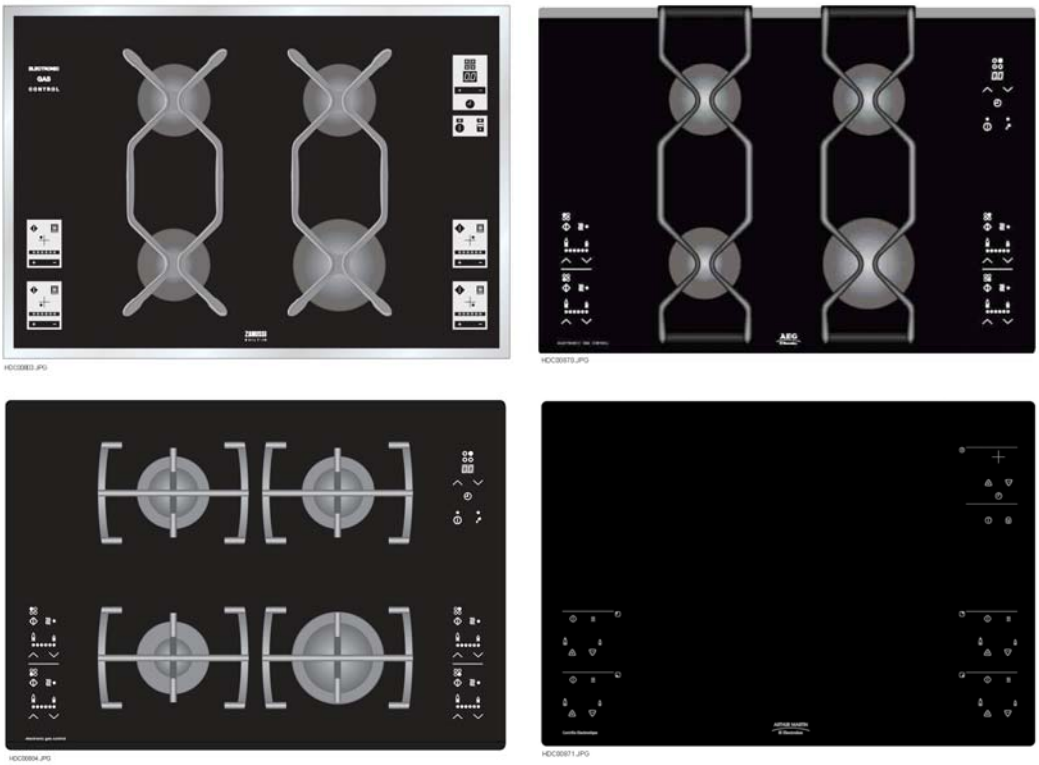
SERVICE MANUAL

COOKING



Built-in hobs

GAS HOBS WITH ELECTRONIC IGNITION

© ELECTROLUX ZANUSSI S.p.A.
Corso Lino Zanussi,30
I - 33080 PORCIA /PN (ITALY)
Tel +39 0434 394850
Fax +39 0434 394096

Publication number
599 36 62-62

EN/SERVICE/FV

SOI

Edition: 04.2005

TABLE OF CONTENTS

1. INTRODUCTION 6
1.1 PURPOSE OF THIS MANUAL 6
1.2 ESD - Electrostatic Discharge and its effect on the components 6
1.3 GENERAL DESCRIPTION 6
2. TECHNICAL CHARACTERISTICS 7
2.1 GENERAL TECHNICAL DATA 7
2.2 CHARACTERISTICS OF BURNERS AND NOZZLES 7
3. CONTROL SECTION AND BURNERS 8
3.1 POSITIONS OF THE CONTROLS 8
3.2 MAIN ON/OFF KEY 9
3.3 BURNER CONTROL PANEL 10
3.4 TIMER CONTROL PANEL 11
3.5 CHILD SAFETY FEATURE 12
4. ELECTRONIC GAS CONTROL SYSTEM 13
4.1 OVERVIEW OF THE SYSTEM 13
4.2 OPERATION OF THE SYSTEM 14
4.3 BASIC CIRCUIT DIAGRAMS 15
BASIC CIRCUIT DIAGRAM: GAS SUPPLY AND CONTROL SYSTEMS 15
IGNITION CIRCUIT - BASIC DIAGRAM 16
4.4 SYSTEM COMPONENTS 17
4.4.1 POWER BOARD 17
4.4.2 SENSOR CONTROL INTERFACE CIRCUIT BOARDS 18
4.4.3 POWERED FLAME MODULATION VALVES 20
Fig. 15 21
4.4.4 MAIN SAFETY SOLENOID VALVE 22
4.5 POSITIONS OF THE COMPONENTS INSIDE THE HOB 23
5. OPERATING THE HOB (extract from Instruction Booklet) 24
5.1 TOUCH CONTROL KEYS 24
5.2 LIGHTING THE BURNER 24
5.3 SWITCHING OFF THE BURNERS 26
5.4 FAILURE TO LIGHT 26
5.5 IF THE FLAME GOES OUT (AUTOMATIC RE-IGNITION) 26
5.6 SWITCHING OFF ALL THE BURNERS 27
5.7 AUTOMATIC BURNER SWITCH-OFF 27
5.8 AUTOMATIC HOB SWITCH-OFF 27
5.9 PROTECTING AGAINST OVERHEATING 28
5.10 CHILD SAFETY FEATURE 28
5.11 TIMER 29
5.10.1 PROGRAMMING THE BURNER SWITCH-OFF TIME 29
5.10.2 USING THE TIMER WITH THE BURNERS SWITCHED OFF/MINUTE-MINDER FUNCTION 31
6. ADAPTING THE HOB TO DIFFERENT TYPES OF GAS 32
6.1 REPLACING THE NOZZLES 32
6.2 ADJUSTING THE HOB FOR THE TYPE OF GAS 32
6.3 ADJUSTING THE MINIMUM SETTING 33
7. ERROR CODES 34
8. TROUBLE-SHOOTING 37
8.1 TROUBLE-SHOOTING USING ERROR CODES 37
8.1.1 ERRORS WITH BURNER BLOCK 37
8.1.2 TROUBLE-SHOOTING WITHOUT ERROR CODES 38
8.1.2 TROUBLE-SHOOTING WITHOUT ERROR CODES 39
8.1.2 TROUBLE-SHOOTING WITHOUT ERROR CODES 40
8.2 TROUBLESHOOTING WITHOUT ERROR CODE 42
9. ACCESSIBILITY 43
9.1 REMOVAL OF TOP FROM THE CABINET 43
9.2 REMOVAL OF GAS SUPPLY CONNECTION 43
9.3 REMOVAL OF UPPER TOP 44
9.4 ACCESS TO COMPONENT ZONE 46
16 - MAIN SAFETY VALVE 46
9.4.1 DISMOUNTING THE BURNER CONTROL ELECTRICA VALVES 47
9.4.2 DISMOUNTING THE MAIN SAFETY ELECTRIC VALVE 48
9.4.3 REPLACEMENT OF INTERFACE BOARDS 49

9.4.4 REPLACEMENT OF POWER BOARD 50
9.4.5 – REPLACEMENT OF BURNERS 51
9.4.6 REPLACEMENT OF THERMOCOUPLES 52
9.4.7 REPLACEMENT OF IGNITION SPARK PLUGS 54
10. ELECTRIC DIAGRAMS 55
10.1 BASIC ELECTRIC DIAGRAM 55
10.2 WIRING DIAGRAM 56
10.3 KEY TO DIAGRAM 57

GENERAL PRECAUTIONS

- These appliances are designed to operate using natural gas (methane) and LPG.
  The appliances are factory-set for use with natural gas (methane). If a different type of gas is utilized (such as LPG), the hob can be re-calibrated by replacing the gas nozzles.

- It is essential to ensure that there is adequate air circulation around all gas appliances.
  Inadequate ventilation, as well as causing the appliance to malfunction, may also result in a lack of oxygen that might be hazardous for persons.

- Installation and connection to the gas and electricity circuits must be carried out by qualified personnel in compliance with all current safety legislation.

- After being in use for a short time, and for some time after switching off, the cooking areas and the surrounding surface will remain very hot.
  A pilot lamp located on the hob remains lit until these cool down.
  In order to avoid serious burns, it is important to ensure that no person touches the surface while the pilot lamp is lit.

- **Do not switch on the burners without pans in the cooking areas**, otherwise the hob may overheat and, after a time, the burner will switch off.

1. INTRODUCTION

1.1 PURPOSE OF THIS MANUAL

The purpose of this Manual is to provide technical details regarding the new control system for built-in gas hobs so that trouble-shooting and repairs cab be carried out correctly.

1.2 ESD - Electrostatic Discharge and its effect on the components

The interface for the control unit is not fitted with an internal device to protect against electrostatic discharge (multiple connectors). When effecting repairs, therefore, the service engineer must check for stabilization of the potential on the oven casing (i.e. discharge any static electricity by touching the oven casing) in order to prevent the possibility of overload, which might damage the control unit.
The same care is necessary when handling control units supplied as spare parts (i.e. not yet fitted to the oven), which must be removed from the protective bag in ESD only after stabilizing the potential (i.e. discharging any static electricity) and only then installed in the appliance.
Important: The theory behind the process of electrostatic charge and discharge is not discussed in this Manual, since the tangible effects are considered to be more important. However, the effects are felt frequently when touching a metal handle and feeling the electrostatic discharge in the form of a minor shock.
But what happens when stabilization of the potential takes place with semi-conductor components (i.e. components on a circuit board, such as integrated circuits, microprocessors etc.)?
Stabilization of the potential takes place across the internal structure of the component. This does not necessarily lead to the immediate destruction of the component; subsequent malfunctions across damaged internal connections may be more harmful, and these occur only as a result of overheating or current overloads.
It is true that almost all sensitive semi-conductor components (such as MOS circuits) have been improved by the addition of protective measures, but the internal structures of these components are today smaller than, for example, ten years ago, which tends to increase their sensitivity to the previous levels.

Important!

Which components are susceptible to damage by static electricity during repairs?
All circuit boards featuring control and command accesses (door switches, food probes etc.), bare tracks and microprocessors, as well as any other circuits with free access.

Examples:

- Programmers with access to the food probe and the door switch.
- Programmers whose control processors are accessible (due to their high costs, the protective systems are only partial).
- W.O.E.C. control units.
- S.O.E.C. control units.
- C.H.E.C. control units.
- KRONOS control units.
- Interface board of the Electronic gas hob.

1.3 GENERAL DESCRIPTION

In these hobs, the burners are controlled entirely by a special electronic system that actions special solenoid valves which regulate the quantity of gas delivered to the burners.
With the introduction of this electronic control system, it is now possible to fit Touch Control keys, as well as to provide greater safety, such as automatic re-lighting of the burners, and several control functions, including indication of residual heat, child safety feature, interruption of all operations using a single switch, safety cut-off in case of power failure or failure to light, automatic timer-controlled switching off and programmed operation of the burners. These functions are described in this manual.

2. TECHNICAL CHARACTERISTICS

2.1 GENERAL TECHNICAL DATA

VOLTAGE	V	220 - 230
POWER ABSORPTION	W	20
DIMENSIONS OF CABINET (HxWxD)	cm	3x71x47
AUTOMATIC IGNITION:		SI
AUTOMATIC RE-IGNITION		SI
GAS CONTROL SYSTEM	TYPE	ELECTRONIC WITH TOUCH CONTROL
SAFETY SOLENOID VALVE	N°	1
MODULATION SOLENOID VALVE	N°	4 (1 x BURNER)
RAPID BURNERS:	N°/kW	1 / 2,9 (G20) – 2,7 (G30)
SEMI-RAPID BURNERS:	N°/kW	2 / 1,9
AUXILIARY BURNERS:	N°/kW	1 / 1,0
TEMPERATURE LIMITS	°C	95°C Burner at minimum 105°C Hob is cut off
AUTOMATIC BURNER SWITCH-OFF		After 4 hours
PROGRAMMING OF BURNERS	MAX. TIME.	40 minutes

2.2 CHARACTERISTICS OF BURNERS AND NOZZLES

Type of GAS	Type of burner (R - L)	Nozzle marking (mm/100)	Nominal thermal delivery kW	Nominal delivery in		Nominal pressure (mbar)
				m^3/h	g/h	
Natural gas (methane) (G20)	**Rapid :** **Semi-rapid :** **Auxiliary :**	119 96 70	2,6 1,6 1,6	0,286 0,181 0,095	- - -	20
Natural gas (methane) (G25)	**Rapid :** **Semi-rapid :** **Auxiliary :**	124 100 71	2,6 1,6 1,6	0,286 0,181 0,095	- - -	25
LPG/Propane or (G30) (G31)	**Rapid :** **Semi-rapid :** **Auxiliary :**	86 71 50	2,5 1,6 1,6	- - -	195 137 72	28-30 (G30) 37 (G31)

(*) Certain models only

NOTE : The consumption and delivery figures are approximate; the exact values are shown in the instruction booklets for each model.

3. CONTROL SECTION AND BURNERS

3.1 POSITIONS OF THE CONTROLS

The figure below illustrates the positions of the controls and the burners.

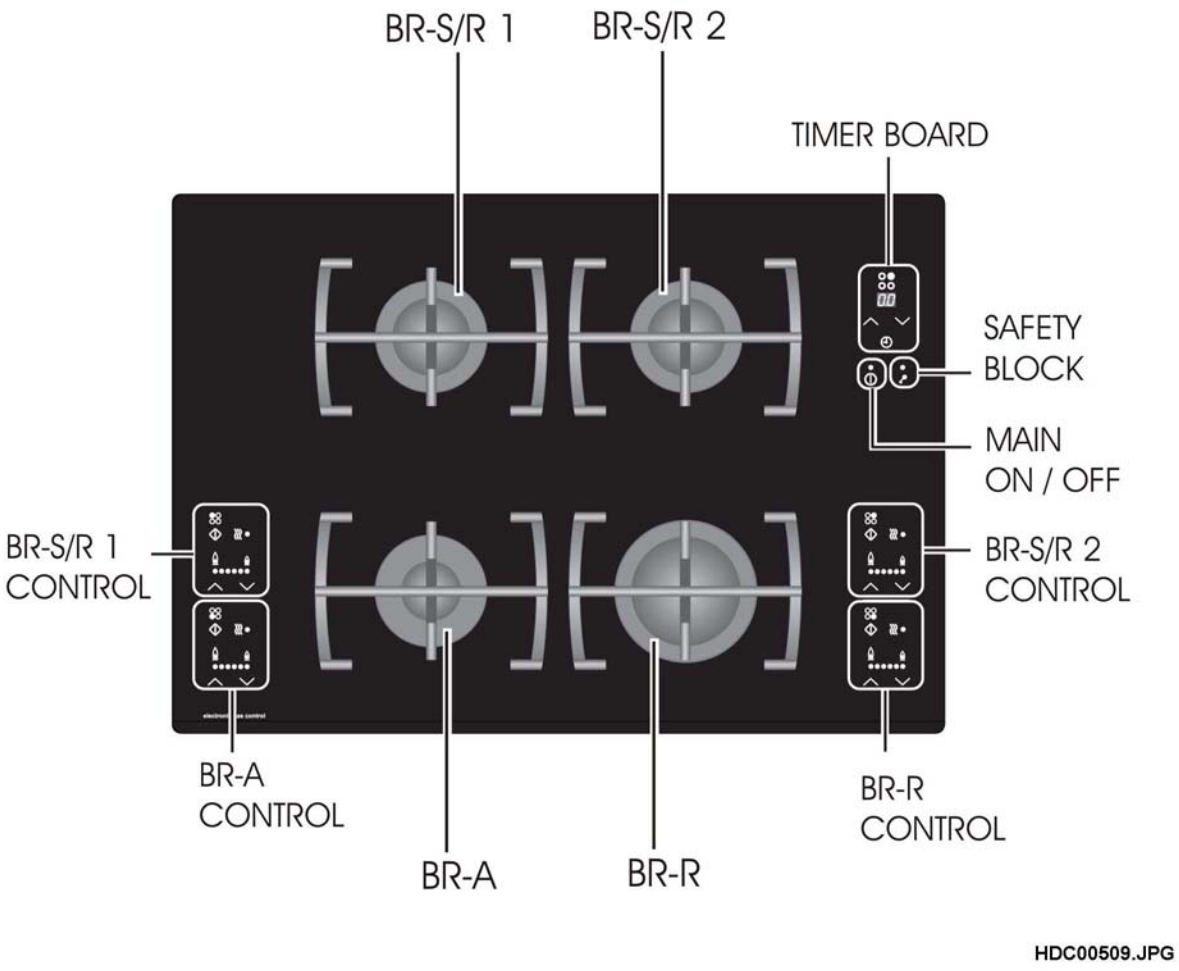


Fig. 1

BR-R **(*)**	-	RAPID BURNER (FRONT-RIGHT)
BR-S/R 1	-	SEMI-RAPID BURNER (REAR-LEFT)
BR-S/R 2	-	SEMI-RAPID BURNER (REAR-RIGHT)
BR-A	-	AUXILIARY BURNER (FRONT-LEFT)
BR-R CONTROL	-	TOUCH CONTROL FOR RAPID BURNER (FRONT-RIGHT)
BR-S/R 1 CONTROL	-	TOUCH CONTROL FOR SEMI-RAPID BURNER (REAR-LEFT)
BR-S/R 2 CONTROL	-	TOUCH CONTROL FOR SEMI-RAPID BURNER (REAR-RIGHT)
BR-A	-	TOUCH CONTROL FOR AUXILIARY BURNER (FRONT-LEFT)
MAIN ON /OFF	-	TOUCH CONTROL - MAIN ON/OFF
TIMER BOARD	-	TOUCH CONTROL - TIMER
SAFETY BLOCK	-	TOUCH CONTROL - CHILD SAFETY FEATURE

(*) Certain models are fitted with a triple-crown burner in place of the rapid burner (see table of burners and nozzles)

3.2 MAIN ON/OFF KEY

The hob is fitted with a main ON/OFF key. The appliance must be switched on before the burners can be ignited.
When the appliance is switched on, the corresponding LED lights.
The ON/OFF switch can be used to switch off all the burners at the same time, which may be necessary if liquids boil over or in situations in which children may be in danger.

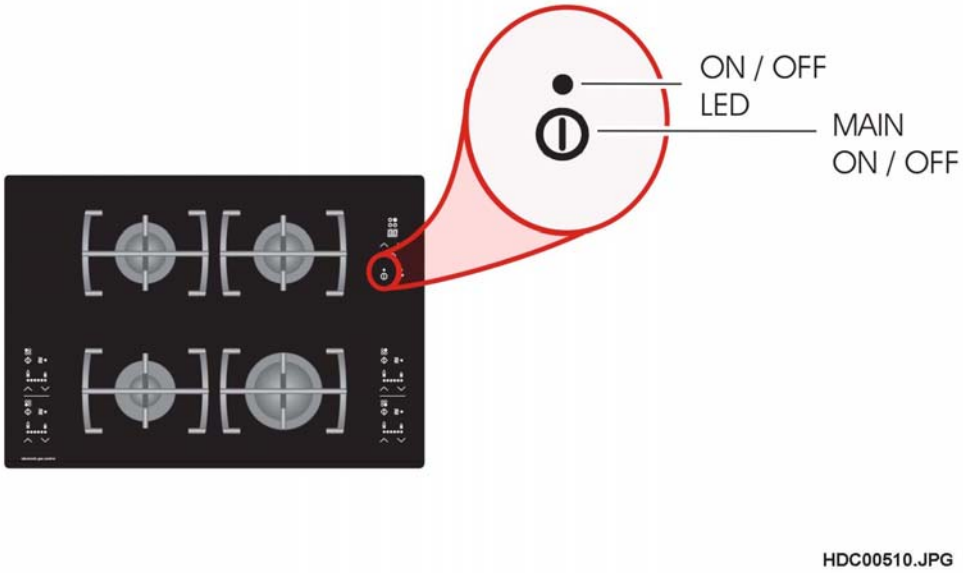


Fig. 2

ON / OFF LED	-	LED INDICATING THAT THE APPLIANCE IS SWITCHED ON
MAIN ON / OFF	-	MAIN ON / OFF SWITCH

3.3 BURNER CONTROL PANEL

Each burner is operated from a specific area of the control panel as indicated in the figure below. Each of the control areas indicates the position of the corresponding burner, the touch control for switching the burner on and off, a LED indicating residual heat, six LEDs indicating the burner setting (level 0 is the lowest setting) and two touch controls for increasing and decreasing the flame.

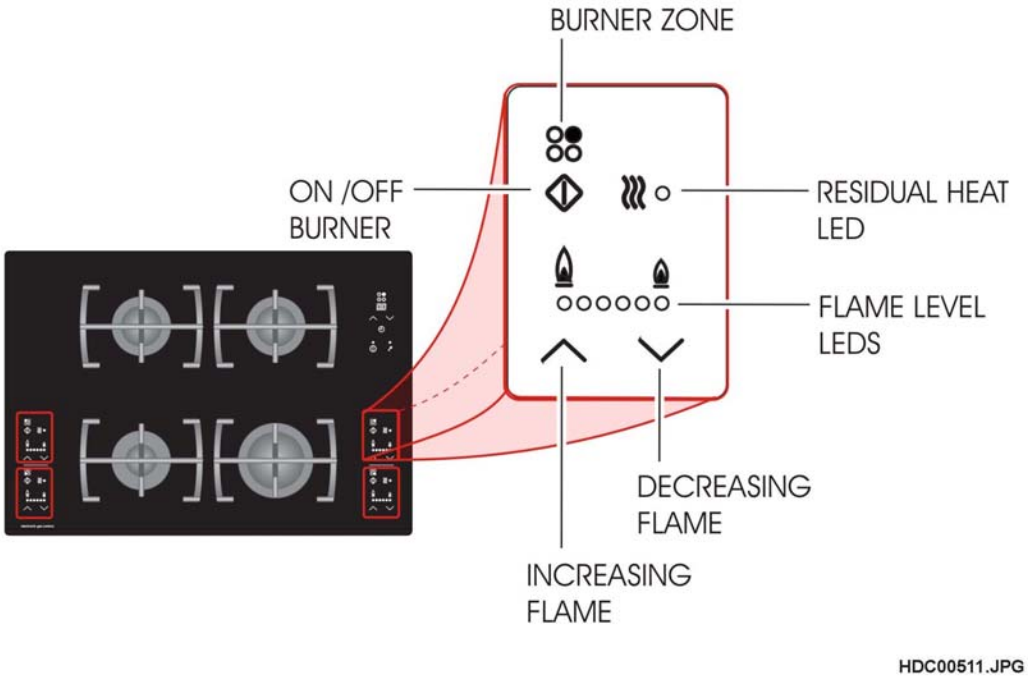


Fig. 3

ON / OFF BURNER	-	SWITCHES THE BURNER ON AND OFF
BURNER ZONE	-	INDICATES THE POSITION OF THE BURNER
RESIDUAL HEAT LED	-	LED INDICATING RESIDUAL HEAT
FLAME LEVEL LEDS	-	6 LEDs INDICATING THE LEVEL OF THE FLAME
INCREASING FLAME	-	TOUCH CONTROL - INCREASES THE FLAME
DECREASING FLAME	-	TOUCH CONTROL - DECREASES THE FLAME

3.4 TIMER CONTROL PANEL

This type of hob also features programmable operation for each burner. The various settings are controlled from the specific zone shown below.
The programming function (which switches off the burner at the end of a preset time) can be used for one burner only at a time. The maximum programming time is 40 minutes.

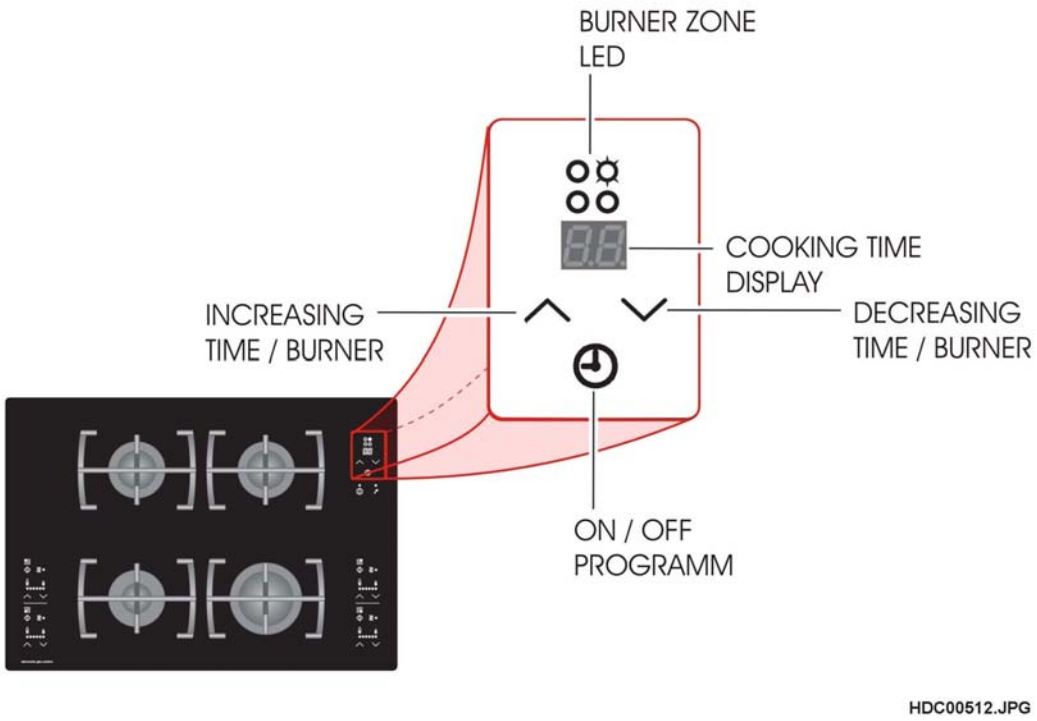


Fig. 4

COOKING TIME DISPLAY	-	DISPLAYS THE TIME FOR WHICH THE BURNER WILL REMAIN LIT
BURNER ZONE LED	-	LED INDICATING THE CORRESPONDING BURNER
ON / OFF PROGRAMME	-	TOUCH CONTROL - SWITCHES THE PROGRAMME ON AND OFF
INCREASING TIME / BURNER	-	TOUCH CONTROL - INCREASES TIME OR SELECTS BURNER
DECREASING TIME / BURNER	-	TOUCH CONTROL - DECREASES TIME OR SELECTS BURNER

3.5 CHILD SAFETY FEATURE

The hob features a child safety system in which the user can disable the controls to prevent inadvertent actioning by children.
When the child safety feature has been selected, only the main ON/OFF switch is enabled (see Fig. 2, page 9).

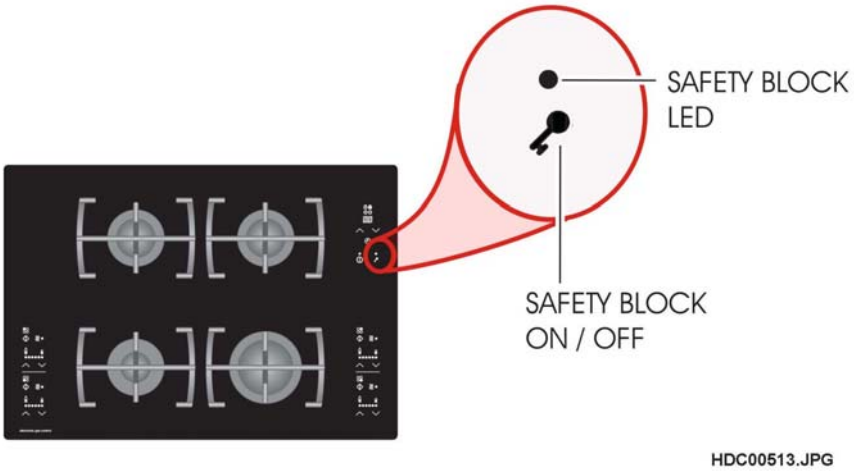


Fig. 5

SAFETY BLOCK LED - LED: CHILD SAFETY FEATURE ON
SAFETY BLOCK ON / OFF - TOUCH CONTROL: SWITCHES ON CHILD SAFETY FEATURE

4. ELECTRONIC GAS CONTROL SYSTEM

4.1 OVERVIEW OF THE SYSTEM

This electronic system is designed to be fitted to Electrolux "Gas on Glass" built-in hobs (70x60 cm) with uncovered burners.
Its main characteristics are as follows:

- Control of four current-production Electrolux burners (uncovered): one rapid, two semi-rapid, one auxiliary.
- Hob in special high-strength safety glass (thickness up to 8 mm).
- Ignition system with 230V spark generator and spark plug.
- Flame detection with thermocouple.
- Wiring circuit comprising the following:
  - Connection between circuit board and valves.
  - Connection between circuit board and spark generator.
  - Connection between circuit board and power circuit.
  - Connection between circuit board and thermocouples.
  - Connection between interface circuit boards and power board.
- Electronic control system comprising:
  - Power board.
  - Interface board (left)
  - Interface board (right)
  - General interface board with: ON/OFF, child safety feature, timer module, display.
- The following gas valves are featured:
  - A main safety valve (automatic)
  - A modulation valve for each burner (four in total)
- User interface system with touch control: each interface controls two burners.
  Each interface board has the following characteristics:
  - "**+**" and "**–**" touch controls for adjustment of the flame.
  - Flame level indicator: 6 levels with LED indication (Levels 1 - 5: modulation; level 6: valve completely open).
  - LED indicators: one LED lights to indicate that the burner is in operation; a second LED warns the user about residual heat around each burner.

  The general interface has the following characteristics:
  - "ON" AND "OFF" controls.
  - Timer function with display module
  - Child safety function.
- A single version of the power board which can be customized via software.
- Easily-customized user interface software.

4.2 OPERATION OF THE SYSTEM

When the user wishes to light one of the burners using the touch control on the burner control panel, the main safety valve **VS** (Fig. 6) opens (unless the valve is already open and feeding a different burner). The corresponding modulation valve **VM** opens and the spark generator actions the spark plug which ignites the burner.

The burner is always ignited at maximum setting. At this point, the flame detection procedure takes place. If the burner has failed to ignite, the ignition system makes two more attempts.

On each burner, the level of the flame can be adjusted using keys ^ or v while the flame setting is displayed by the flame level LEDs.

In the event of problems with a burner (e.g. if the burner is wet etc.) and the main switch is set to ON, it is possible to disable only the valve (**VM**) relative to that burner, using the touch control ◇. This interrupts the supply of gas only to the single burner, while the remaining burners continue to operate normally.

If the power supply is switched off or if the electronic control system detects a malfunction (e.g. a problem with the electrical connections), the main valve **VS** and the corresponding modulation valve **VM** intervene to cut off the gas supply to the burners.

In all cases, therefore, the gas supply to the burners is controlled by at last two safety valves. After a power failure, the system remains disabled, which is indicated by the flashing of all the LEDs in the hob control zone. To restore the burners to normal operation after a power failure (LEDs flashing), it is necessary to wait at least 60 seconds and then press buttons ^ and v , simultaneously and then button ◇, after which the burner can be used normally.

The presence of residual heat on and around the burners is indicated by the corresponding LEDs positioned on the hob control panels.

If the temperature in the electronic section should exceed about 95°C, in order to prevent possible damage, the system reduces all the burners to the lowest setting; if the temperature should exceed 105°C, then all the safety valves that control the supply to the burners are closed and an error code is displayed.

4.3 BASIC CIRCUIT DIAGRAMS

BASIC CIRCUIT DIAGRAM: GAS SUPPLY AND CONTROL SYSTEMS

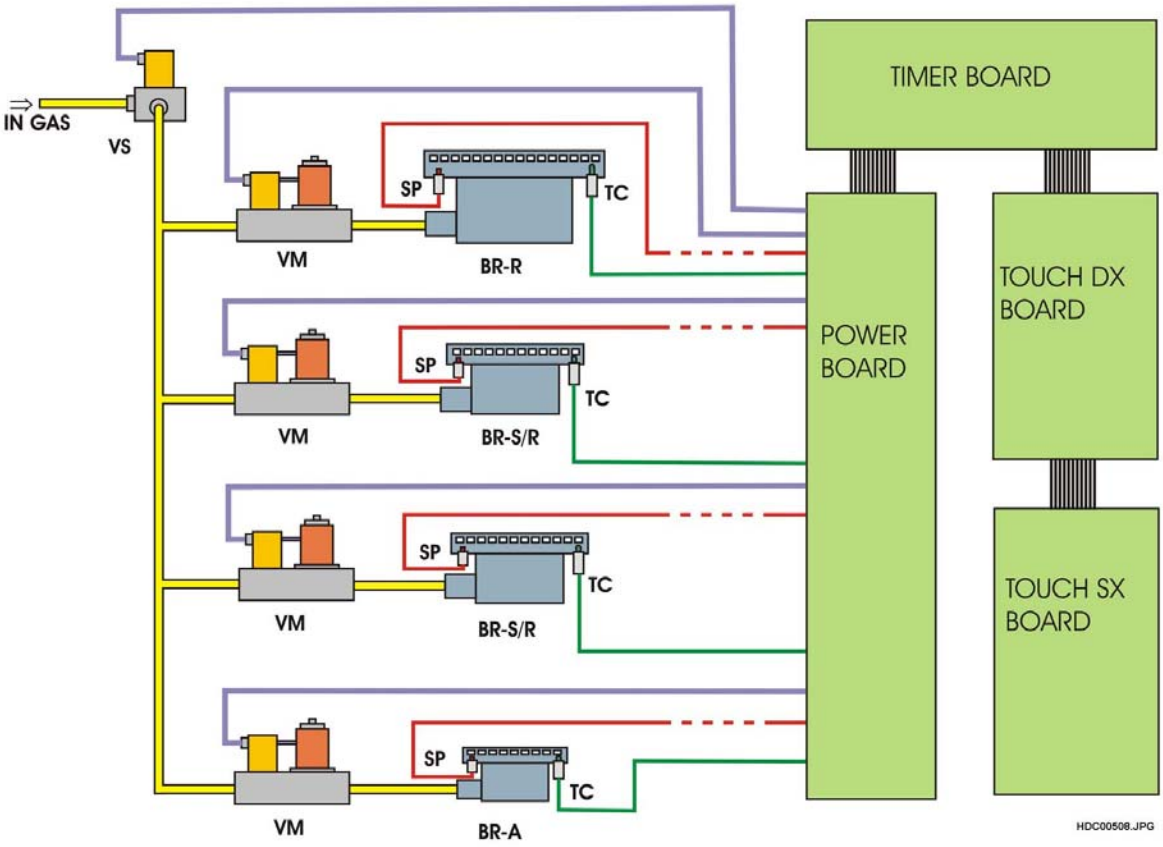


Fig. 6

IN GAS	-	GAS INLET
VS	-	MAIN SAFETY VALVE
VM	-	POWERED MODULATION VALVE
SP	-	SPARK PLUG
TC	-	THERMOCOUPLE
BR-R	-	RAPID BURNER
BR-S/R	-	SEMI-RAPID BURNER
BR-A	-	AUXILIARY BURNER
TIMER BOARD	-	MAIN TOUCH-CONTROL INTERFACE BOARD
TOUCH DX BOARD	-	RH TOUCH-CONTROL INTERFACE BOARD
TOUCH SX BOARD	-	LH TOUCH-CONTROL INTERFACE BOARD

IGNITION CIRCUIT - BASIC DIAGRAM

Lighting of the burners is performed by the spark plugs, which are powered by a single spark generator actioned by the power board.

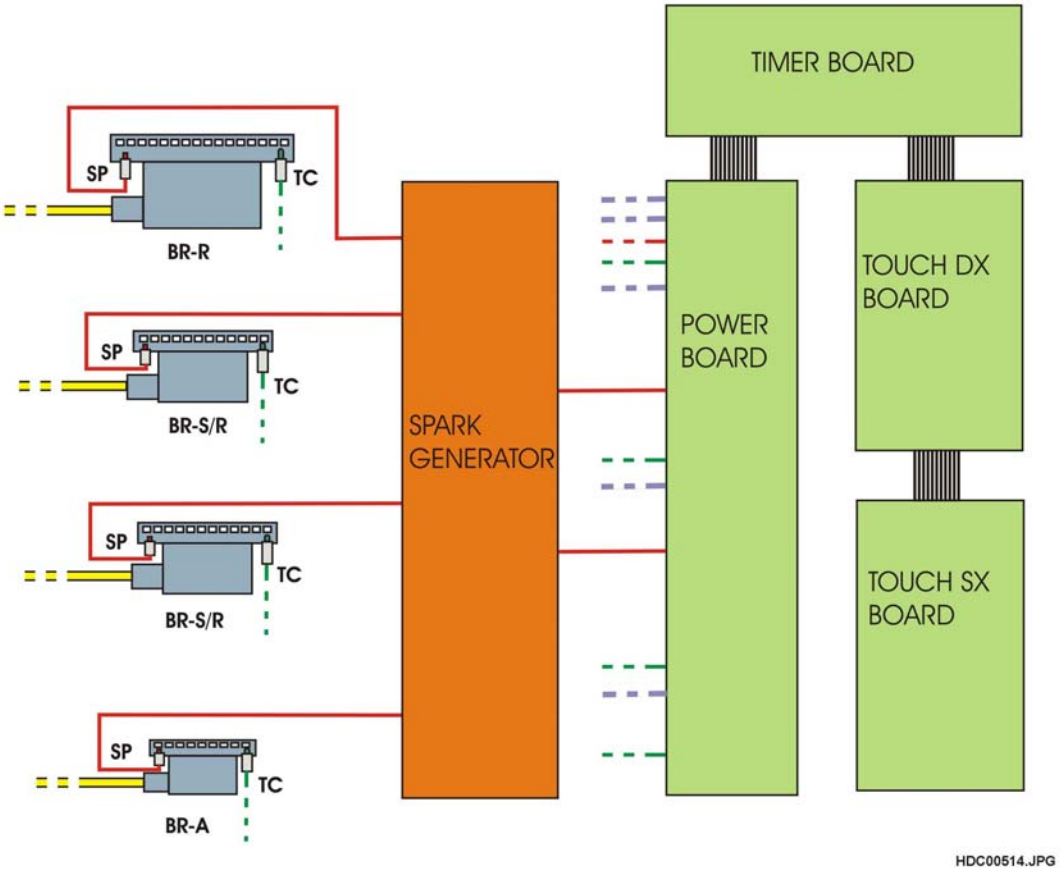


Fig. 7

SP	-	SPARK PLUG
TC	-	THERMOCOUPLE
BR-R	-	RAPID BURNER
BR-S/R	-	SEMI-RAPID BURNER
BR-A	-	AUXILIARY BURNER
POWER BOARD	-	POWER BOARD
TIMER BOARD	-	MAIN TOUCH-CONTROL INTERFACE BOARD
TOUCH DX BOARD	-	RH TOUCH-CONTROL INTERFACE BOARD
TOUCH SX BOARD	-	LH TOUCH-CONTROL INTERFACE BOARD

4.4 SYSTEM COMPONENTS

The system comprises four circuit boards: one power board and three interface boards. The hob controls are divided among the three general interface boards:

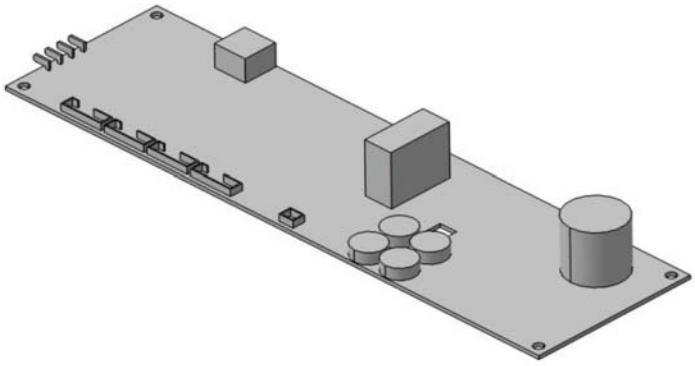
- General interface and timer board.
- RH interface board, connected directly to the general interface board.
- LH interface board, identical to the RH board but connected directly to the power board.

The gas is controlled by a main safety solenoid valve and by four powered modulation valves (one for each burner).
The presence of a flame is detected by four thermocouples (one for each burner).

4.4.1 POWER BOARD

The power board is customized by a software that defines all the system's control and safety parameters. This software is entered on completion of the production of the hob.
The main functions of the power board are as follows:

- Control for spark generator for lighting the burners.
- Flame presence detection by thermocouples
- Control of the main safety valve.
- Control of the modulation valve for each burner.
- Regulation, control and diagnostics for each burner.



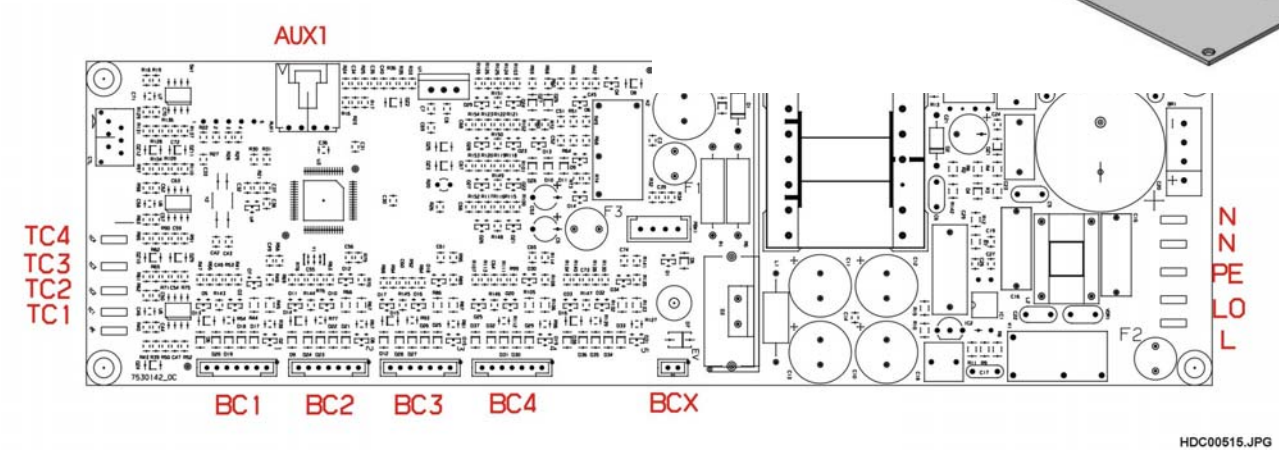


Fig. 8

AUX1	-	SERIAL LINE
TC1	-	CONNECTION TO INTERFACE BOARD
TC2	-	CONNECTION TO INTERFACE BOARD
TC3	-	CONNECTION TO INTERFACE BOARD
TC4	-	CONNECTION TO INTERFACE BOARD
BC1	-	POWER TO SOLENOID VALVE - BURNER BR-A
BC2	-	POWER TO SOLENOID VALVE - BURNER BR-R
BC3	-	POWER TO SOLENOID VALVE - BURNER BR-S/R 2
BC4	-	POWER TO SOLENOID VALVE - BURNER BR-S/R 1
BCX	-	POWER TO MAIN SAFETY SOLENOID VALVE
N	-	POWER SUPPLY (NEUTRAL)
PE	-	EARTH
LO	-	POWER TO SPARK GENERATOR
L	-	POWER SUPPLY (LIVE)

4.4.2 SENSOR CONTROL INTERFACE CIRCUIT BOARDS

This hob is provided with a touch sensor control device.
To insert the controls in the hob, some sensors interface electronic PCBs are used in place of the normal buttons which control the switches placed in the control unit.
The system consists of sensor PCBs placed under the glass which recognise the presence of a finger at a distance of about 4 mm from the sensors (glass thickness).
The sensor PCBs include different control units with touch sensors used on the basis of the control software (see Fig. 9, 10 and 11).

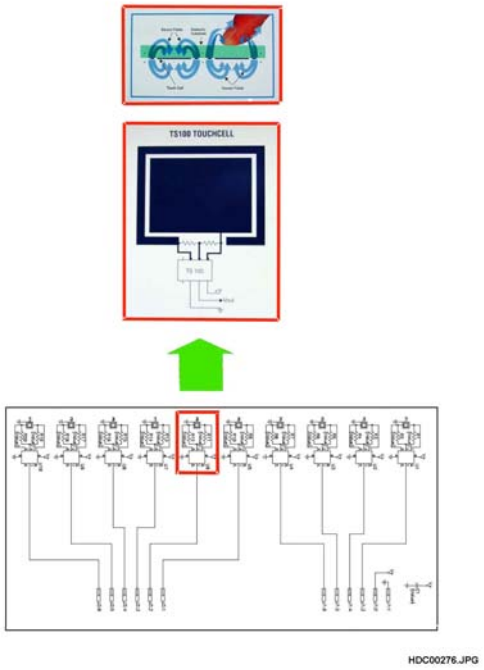


Fig. 9

The functions of the various controls and of the LEDs and displays are listed below.

BOARD FOR LEFT FRONT AND LEFT REAR SECTIONS

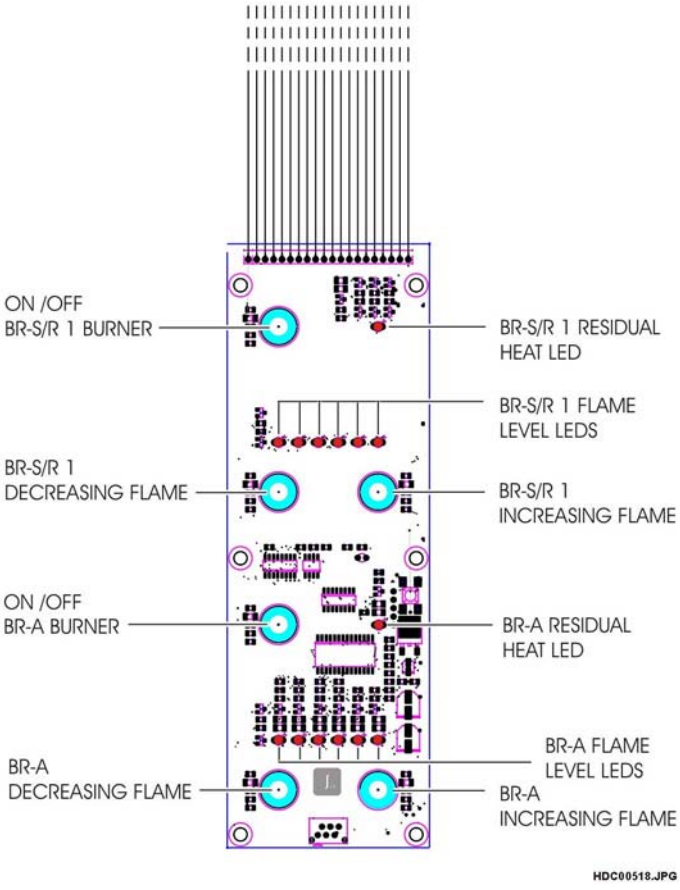


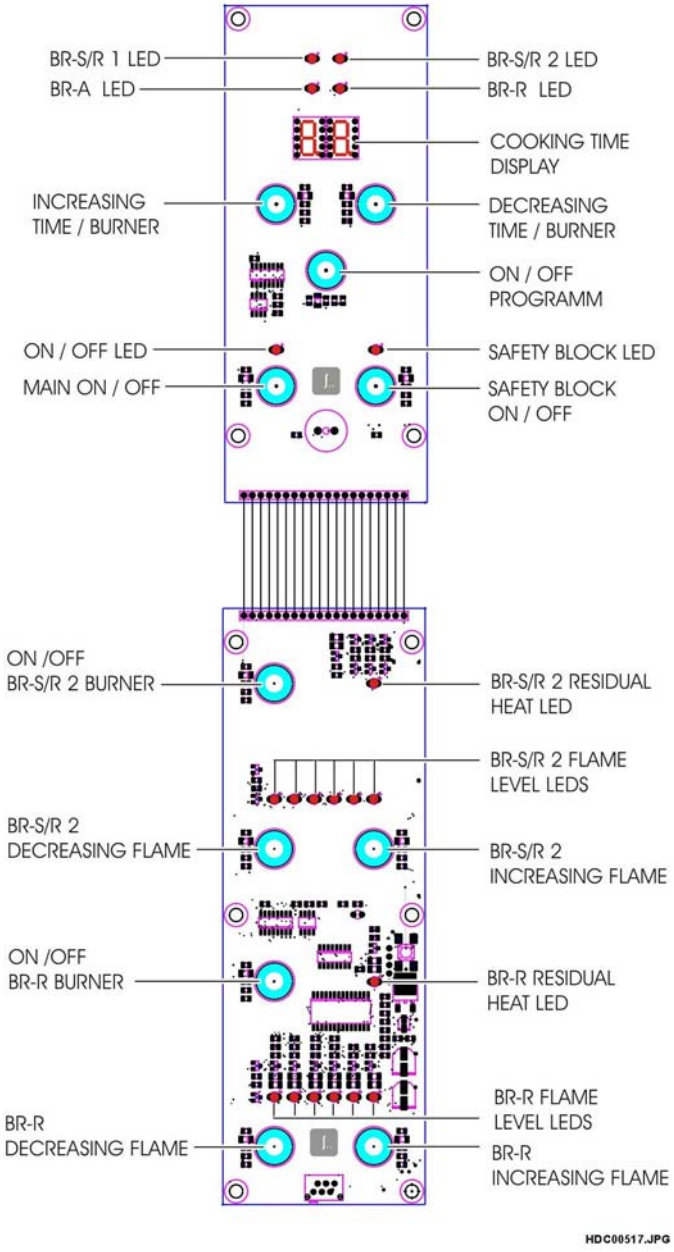
Fig. 10

ON / OFF BR-S/R 1 BURNER	ON/OFF - REAR LEFT BURNER
BR-S/R 1 RESIDUAL HEAT LED	RESIDUAL HEAT - REAR LEFT BURNER
BR-S/R 1 FLAME LEVEL LEDS	FLAME LEVEL LEDs - REAR LEFT BURNER
BR-S/R 1 DECREASING FLAME	DECREASE FLAME - REAR LEFT BURNER
BR-S/R 1 INCREASING FLAME	INCREASE FLAME - REAR LEFT BURNER
ON / OFF BR-R BURNER	ON/OFF - FRONT LEFT BURNER
BR-R RESIDUAL HEAT LED	RESIDUAL HEAT - FRONT LEFT BURNER
BR-R FLAME LEVEL LEDS	FLAME LEVEL LEDs - FRONT LEFT BURNER
BR-R DECREASING FLAME	DECREASE FLAME - FRONT LEFT BURNER
BR-R INCREASING FLAME	INCREASE FLAME - FRONT LEFT BURNER

Fig. 11

BR-S/R 1 LED	LED FOR REAR LEFT BURNER
BR-S/R 2 LED	LED FOR REAR RIGHT BURNER
BR-A LED	LED FOR FRONT LEFT BURNER
BR-R LED	LED FOR FRONT RIGHT BURNER
ON / OFF BR-S/R 2 BURNER	ON/OFF - REAR RIGHT BURNER
BR-S/R 2 RESIDUAL HEAT LED	RESIDUAL HEAT - REAR RIGHT BURNER
BR-S/R 2 FLAME LEVEL LEDS	FLAME LEVEL LEDs - REAR RIGHT BURNER
BR-S/R 2 DECREASING FLAME	DECREASE FLAME - REAR RIGHT BURNER
BR-S/R 2 INCREASING FLAME	INCREASE FLAME - REAR RIGHT BURNER
ON / OFF BR-R BURNER	ON/OFF - FRONT RIGHT BURNER
BR-R RESIDUAL HEAT LED	RESIDUAL HEAT - FRONT RIGHT BURNER
BR-R FLAME LEVEL LEDS	FLAME LEVEL LEDs - FRONT RIGHT BURNER
BR-R DECREASING FLAME	DECREASE FLAME - FRONT RIGHT BURNER
BR-R INCREASING FLAME	INCREASE FLAME - FRONT RIGHT BURNER

MAIN BOARD / TIMER



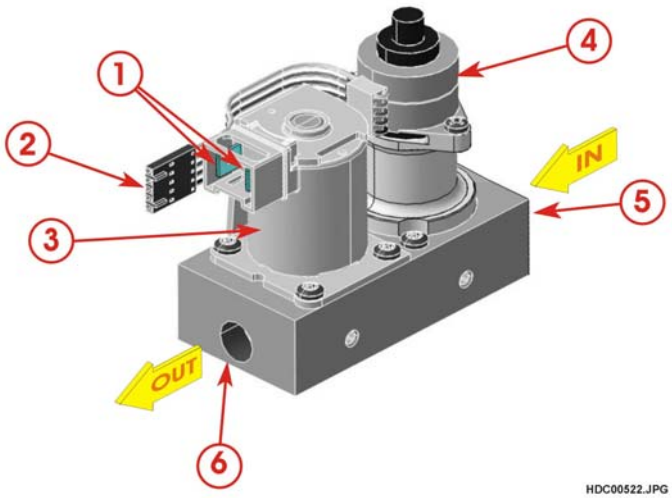
BOARD FOR RIGHT FRONT
AND RIGHT REAR SECTIONS

4.4.3 POWERED FLAME MODULATION VALVES

The flame control valves comprise two sections: the modulation section and the safety valve section.

Fig. 11

1 - ELECTRICAL CONNECTORS (FASTONS)
2 - CONNECTOR FOR MODULATION MOTOR
3 - VALVE SOLENOID
4 - MODULATION MOTOR (STEPPING LINEAR ACTUATOR)
5 - GAS INLET COUPLING
6 - GAS DELIVERY COUPLING

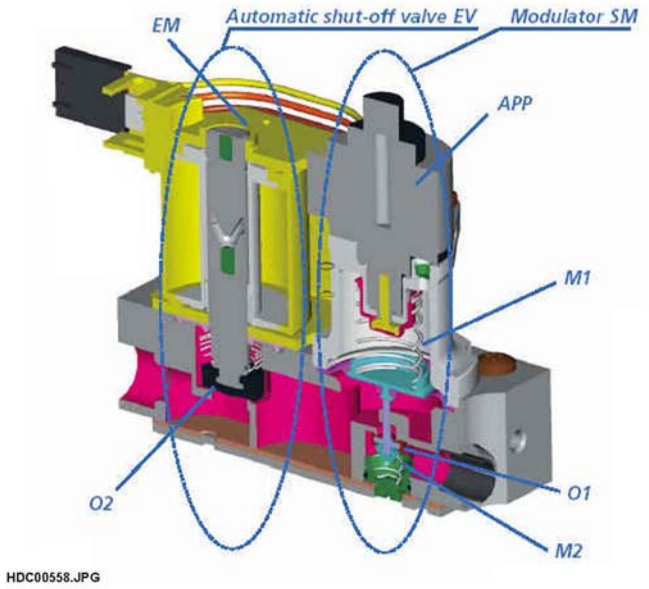


The modulation section **SM** comprises a pressure regulator which, by means of a stepping linear actuator **APP**, compresses the regulation spring **M1** , thus obtaining one of the six levels of closure of element **O1.** The output pressure varies according to the compression of the spring **M1** and therefore according to the electronic control system.
When actuator **APP** is in the minimum compression position of spring **M1**, the closing element **O1** is forced into the closed position by spring **M2**. On the contrary, when the actuator is at maximum position (i.e. when the flame is at maximum setting), the closing element **O1** is forced into the completely-open position.
In this way the **SM** assembly acts as a modulator for the delivery pressure and therefore for the power of the burner (flame setting). The **SM** assembly also serves to cut off the gas.

The safety solenoid section **EV** consists of a control coil **EM** and a closure element **O2**, and acts as a safety valve.

Fig. 12

APP - LINEAR STEPPING ACTUATOR (MOTOR)
EM - CONTROL COIL
EV - SAFETY VALVE
M1 - REGULATION SPRING
M2 - CLOSURE SPRING
O1 - MODULATOR CLOSING ELEMENT
O2 - CLOSING ELEMENT FOR SAFETY VALVE
SM - MODULATOR



PRESSURE DIAGRAM WITH 20mbar NATURAL GAS

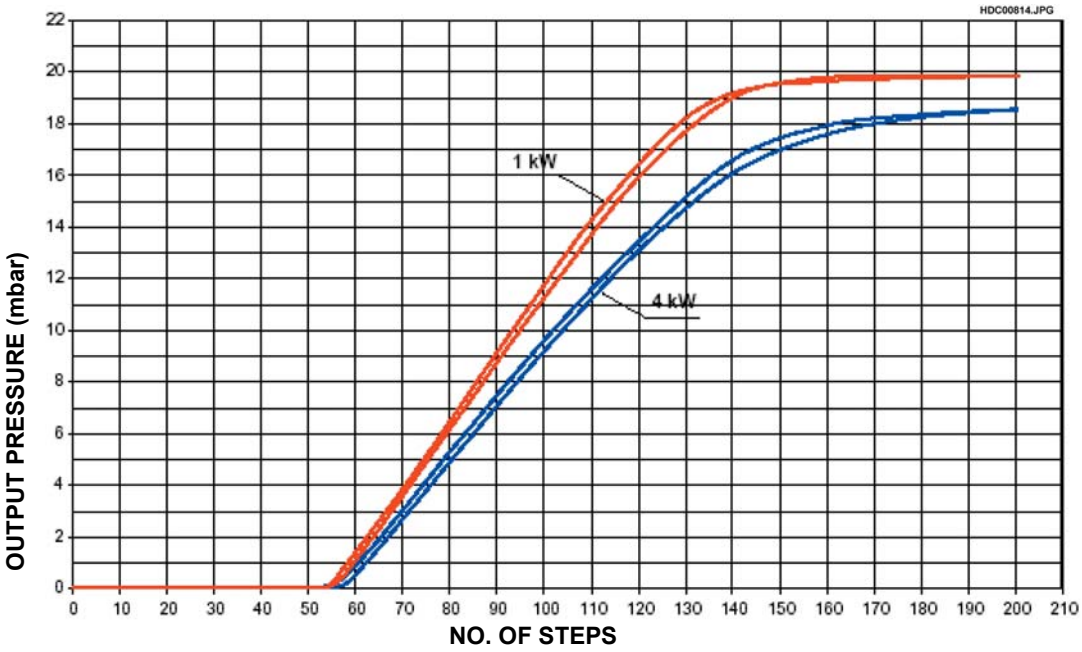


Fig. 14

PRESSURE DIAGRAM WITH 37mbar LIQUID GAS

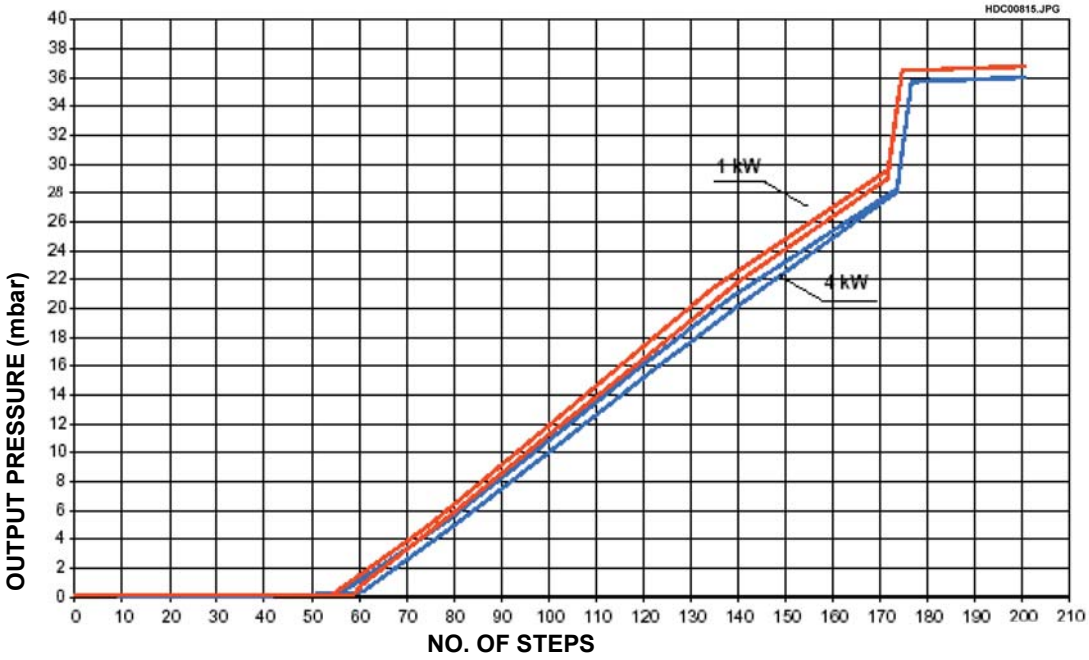


Fig. 15

MODULATION CONTROL MOTOR (STEP-BY-STEP)

The modulation control motor of the solenoid valves is a unipolar step-by-step type.
Please find below the connection diagram of the motor and the rotation diagram.

MOTOR CONNECTION DIAGRAM

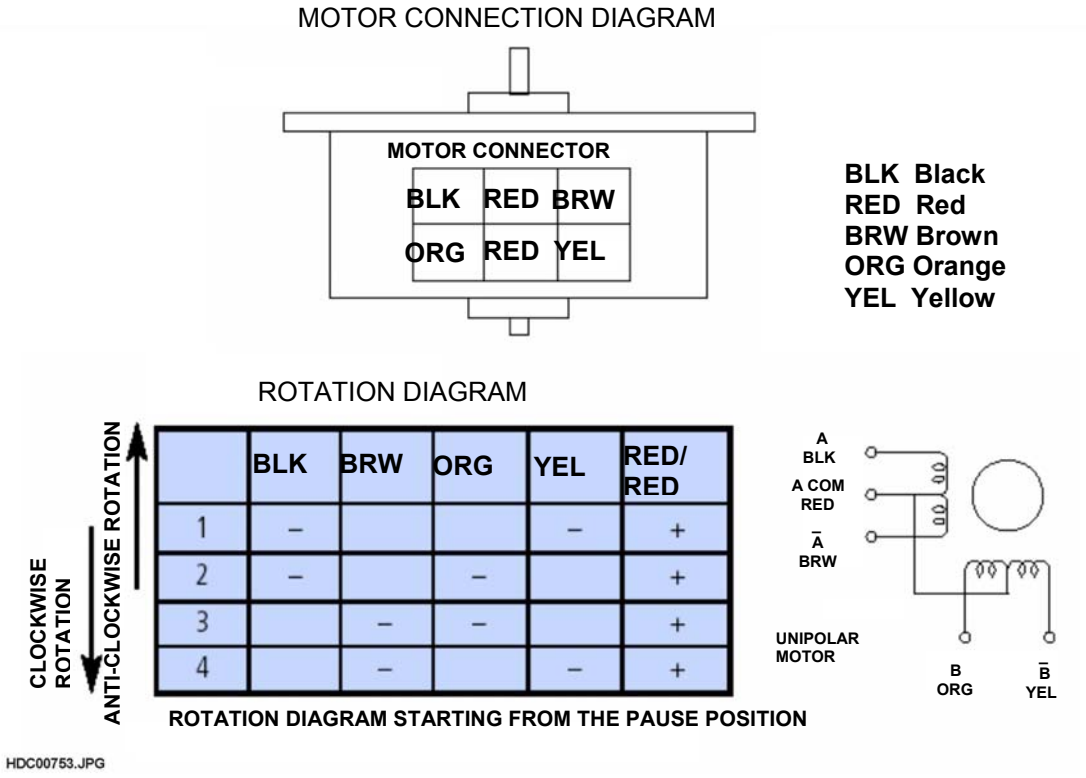


Fig. 17

4.4.4 MAIN SAFETY SOLENOID VALVE

The function of the main safety valve is to provide an extra safety feature in controlling the delivery of gas.
The internal structure and the operation of the valve are identical to the **EM** section of the burner control valves described in the corresponding section.

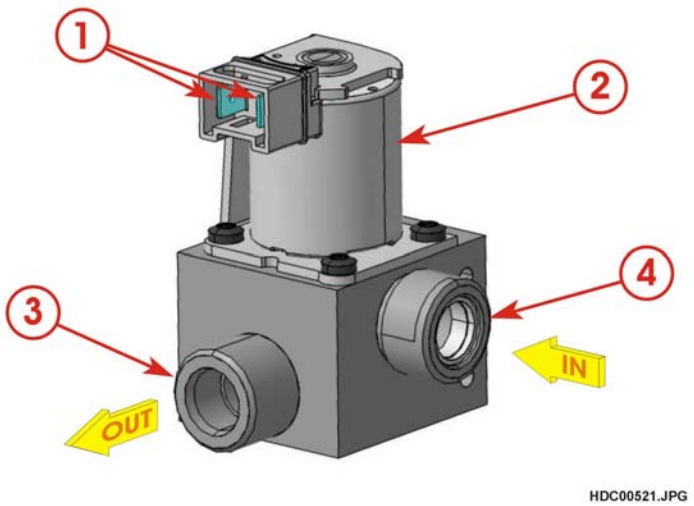


Fig. 17

1 - ELECTRICAL CONNECTOR (FASTON)
2 - SOLENOID
3 - GAS DELIVERY COUPLING
4 - GAS INLET COUPLING

4.5 POSITIONS OF THE COMPONENTS INSIDE THE HOB

The figure below shows the positions of the various components inside the hob.

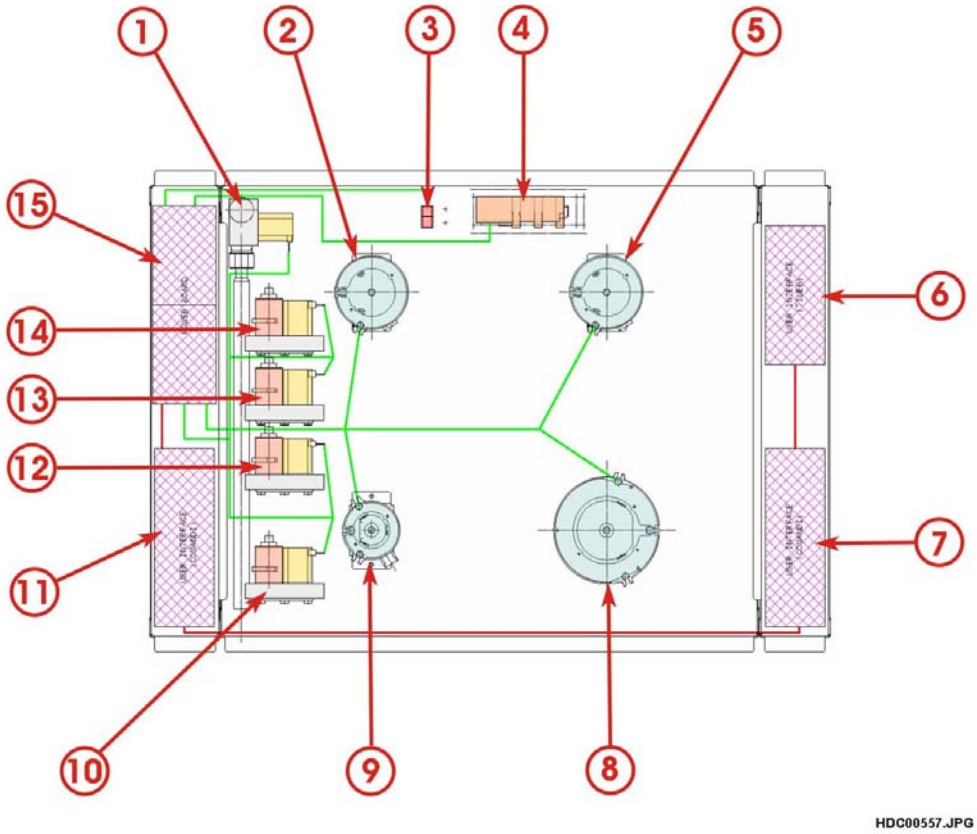


Fig. 18

1 - MAIN SAFETY SOLENOID VALVE
2 - LEFT REAR BURNER BR-S/R 1 (SEMI-RAPID)
3 - TERMINAL BLOCK FOR POWER SUPPLY
4 - SPARK GENERATOR
5 - RIGHT REAR BURNER BR-S/R 2 (SEMI-RAPID)
6 - GENERAL INTERFACE BOARD (TOUCH CONTROL)
7 - POWER BOARD
8 - RIGHT FRONT BURNER BR-R (RAPID)
9 - LEFT FRONT BURNER BR-A (AUXILIARY)
10 - CONTROL VALVE FOR LEFT FRONT BURNER BR-A (AUXILIARY)
11 - LEFT INTERFACE BOARD (TOUCH CONTROL)
12 - CONTROL VALVE FOR RIGHT FRONT BURNER BR-R (RAPID)
13 - CONTROL VALVE FOR RIGHT REAR BURNER BR-S/R 2 (SEMI-RAPID)
14 - CONTROL VALVE FOR LEFT REAR BURNER BR-S/R 1 (SEMI-RAPID)
15 - POWER BOARD

5. OPERATING THE HOB (extract from Instruction Booklet)

Before using the appliance, remove all packaging material, including advertising labels and protective film, if any.

5.1 TOUCH CONTROL KEYS

The hob is operated using special "touch control" sensor keys.
To operate the hob, simply touch the appropriate sensor with a fingertip.
Do not touch more than one sensor at a time when operating the hob.

The symbols listed below indicate the functions of the various touch keys.

Main ON/OFF (touch control)

Light burner (touch control)

Flame level indicator LEDs

Increase flame setting

Reduce flame setting

Residual heat warning LED

BURNER CONTROL AREA

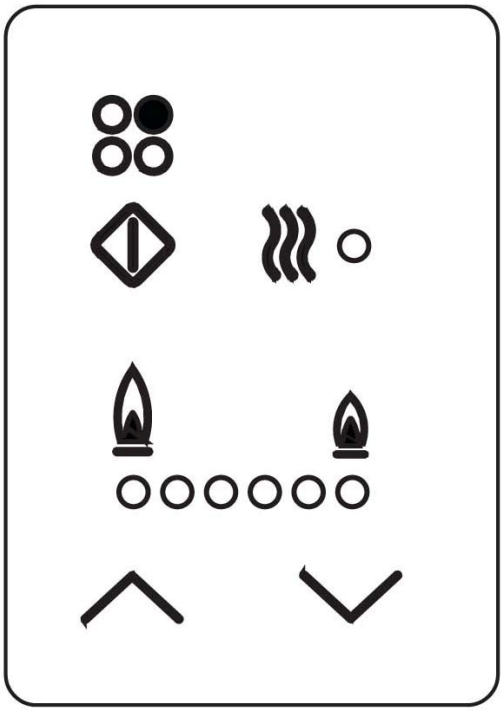


Fig. 19

5.2 LIGHTING THE BURNER

1. Touch the main ON/OFF key for three seconds to switch the hob on.
   The red LED above the touch control will light, and the buzzer will sound.
   The hob is now ready for use.

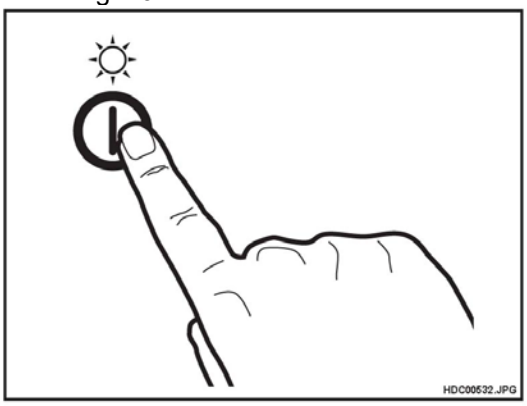


Fig. 20

2. Touch the sensor key for the required burner.

   All LEDs above the sensor keys and will light.

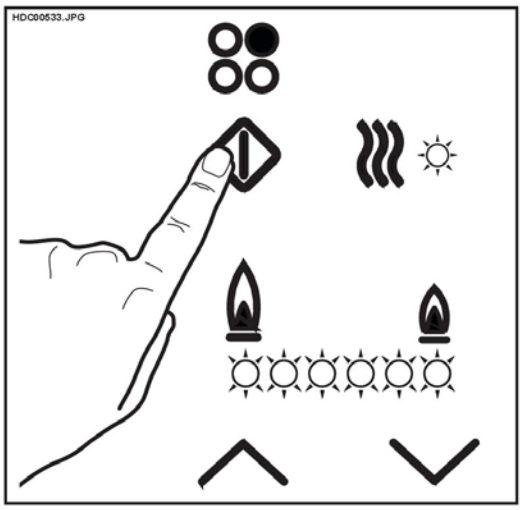


Fig. 21

3. Within 3 seconds touch the sensor key or to turn on the burner.

   - If the sensor key is touched the burner will turn on automatically at the max. level of the flame (all the LEDs indicating the flame level remain lit.

   - If the sensor key is touched, the burner will turn on automatically at medium level of the flame (3 LEDs indicating the flame level remain lit).

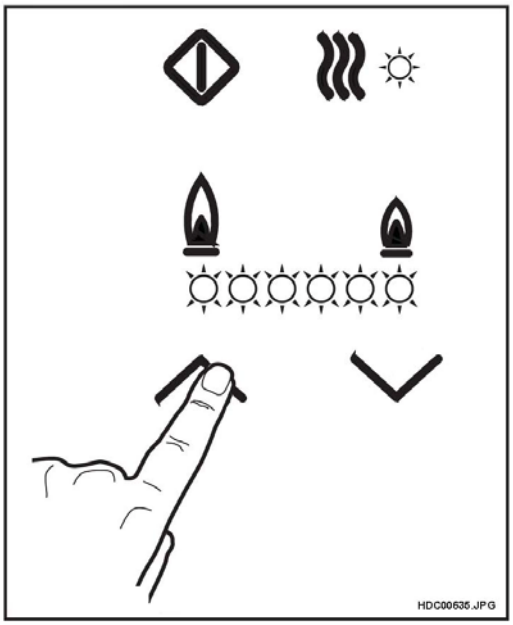


Fig. 22

4. To increase or reduce the flame level of the burner, use the sensor keys or .

   The residual heat pilot lamp lights immediately after the switching on of the burner.
   It indicates that the cooking zone heats up and remains lit until the grill and the burner cool down.

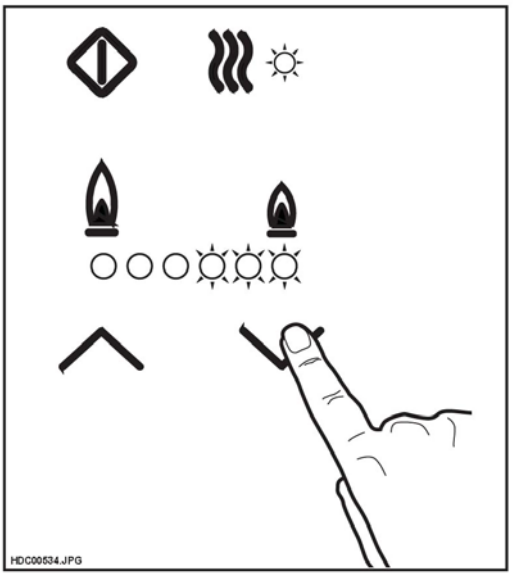


Fig. 23

5.3 SWITCHING OFF THE BURNERS

1. To switch off a burner, touch the sensor key. All the "flame level" LEDs for the burner switch off. The "residual heat" LED remains lit until the burner and the hob have cooled down.

5.4 FAILURE TO LIGHT

The hob's ignition device generates a series of small sparks for about 6 seconds.
If for any reason the flame should not ignite within this period, the flow of gas to the burner is interrupted and the hob remains in "pause" for about 3 seconds, after which it automatically attempts to ignite the burner for a further period of 6 seconds.
After three failed attempts at ignition, the gas supply to the burner is cut off to ensure safety.
The "flame level" LEDs and the "residual heat" LED remain flashing.

Important: If the safety system cuts off the gas to a burner, it cannot be operated for about 60 seconds.

After 60 seconds, the burner can be re-activated by pressing and simultaneously.

The burner can now be used by touching sensor key .
See chapter 5.2 Lighting the burner.

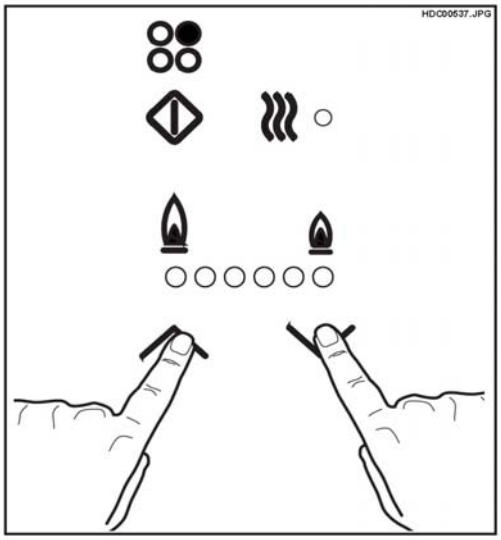


Fig. 24

Important: Ensure that the crown, the cap and the grille are correctly positioned (see figure opposite)

5.5 IF THE FLAME GOES OUT (AUTOMATIC RE-IGNITION)

If the burner should for any reason be extinguished (by draughts, overflowing liquids etc.), the flow of gas is immediately interrupted. Then, after about 20 seconds, the hob automatically attempts to re-ignite the flame.
At the moment of re-ignition, the flame lights at the maximum level, and is then automatically regulated to the level to which it was set before being extinguished.

After three failed attempts at ignition, the gas supply to the burner is cut off to ensure safety.
The "flame level" LEDs and the "residual heat" LED remain flashing.

Important: If the safety system cuts off the gas to a burner, it cannot be operated for about 60 seconds.

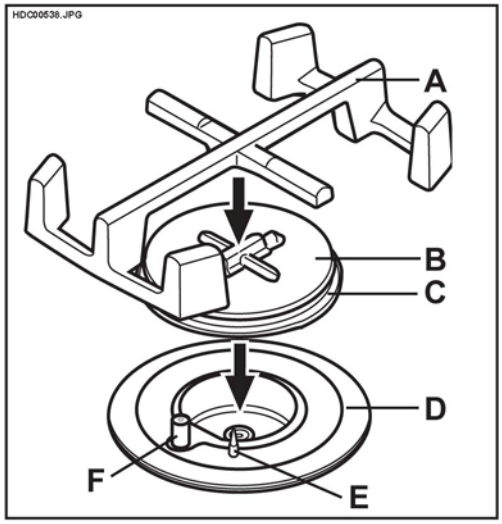


Fig. 25

A - Grille
B - Cap
C - Flame ring
D - Burner
E - Thermocouple
F - Spark plug

After 60 seconds, the burner can be re-activated by pressing ^ and v simultaneously.
The burner can now be used by touching sensor key ◇

In the event that the burner ignition system is inoperative, do not use piezoelectric ignition devices. If necessary, matches should be used.

5.6 SWITCHING OFF ALL THE BURNERS

The ON/OFF touch control ⏻ can be used to switch all the burners off immediately and simultaneously, in case of emergencies or unexpected events (overflowing liquids, situations of danger involving children etc.)

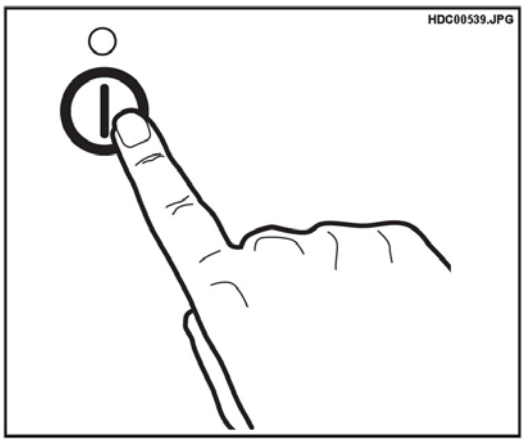


Fig. 26

5.7 AUTOMATIC BURNER SWITCH-OFF

In the event that the user should forget to switch off a burner and does not adjust the controls, the burner will switch off automatically after four hours.
In this event, the gas supply is disconnected and the burner is blocked.

Important: If the safety system cuts off the gas to a burner, it cannot be operated for about 60 seconds.

After 60 seconds, the burner can be re-activated by pressing ^ and v simultaneously.
The burner can now be used by touching sensor key ◇

5.8 AUTOMATIC HOB SWITCH-OFF

If no burner is switched on, even if the hob is activated (the LED above the activation touch key ⏻ is on), the hob deactivates automatically if within 30 minutes one control is not activated.

5.9 PROTECTING AGAINST OVERHEATING

If the hob is subjected to intensive use, e.g. if several burners are operated for long periods at maximum flame setting, a temperature sensor checks for possible overheating and, if necessary, automatically reduces the settings of all the burners to minimum level.
If, in spite of this reduction, the temperature continues to rise, the burners are all switched off and the hob enters safety block mode.

Important: If the safety system cuts off the gas to all the burners, they cannot be operated for about 60 seconds.

After 60 seconds, the burner can be re-activated by pressing ^ and v simultaneously.

The burner can now be used by touching sensor key ⏻

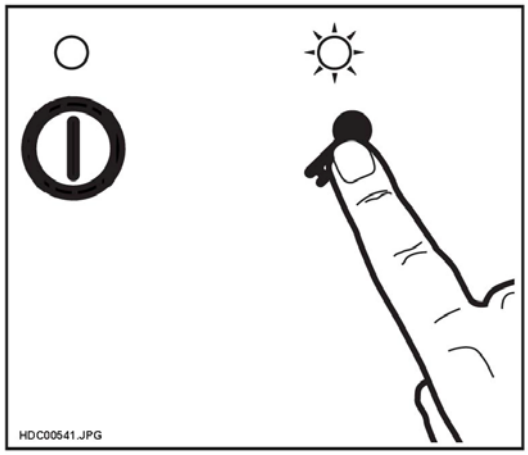


Fig. 22

5.10 CHILD SAFETY FEATURE

The "Child safety" feature allows the user to disable all the hob controls to prevent them from being inadvertently used.

1. Press touch key 🔒 for about three seconds
   The red pilot lamp positioned above the touch key lights and the buzzer sounds.

Now, all the controls on the hob are disabled, with the exception of the ON/OFF sensor key.
Any burners that are lit will remain lit, but the flame setting cannot be altered.

2. To re-enable the controls, press touch key 🔒 for about three seconds.
   The red pilot lamp switches off and the buzzer sounds.

5.11 TIMER

The hob features an electronic timer that enables the user to select a cooking time when the burner is in operation.
Also, it is possible to use the timer – when the hob is not in operation – as a minute-minder.

The hob can also be operated manually, i.e. without using the timer.
The timer is inoperative when the hob is disabled.

The symbols on the timer control zone are described below.

Touch control for switching on the timer and selecting the burner.

Cooking time display

Burner selected

TIMER CONTROL PANEL

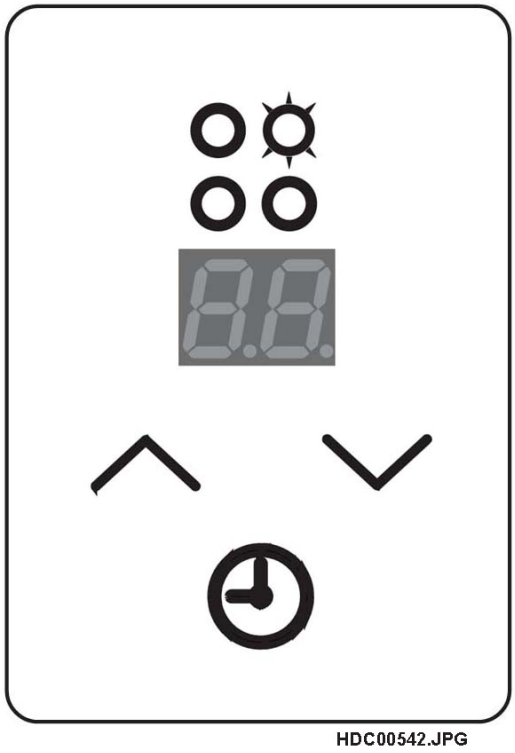


Fig. 23

5.10.1 PROGRAMMING THE BURNER SWITCH-OFF TIME

To programme the time at which the burner switches off, proceed as follows:

1. If necessary, switch on the hob by touching the ON / OFF touch key for about three seconds.
2. Light the burner by touching the touch control and use touch keys or to adjust the flame setting (see "LIGHTING THE BURNER")
3. Switch on the timer and select the desired burner by touching sensor until the correct burner is displayed.

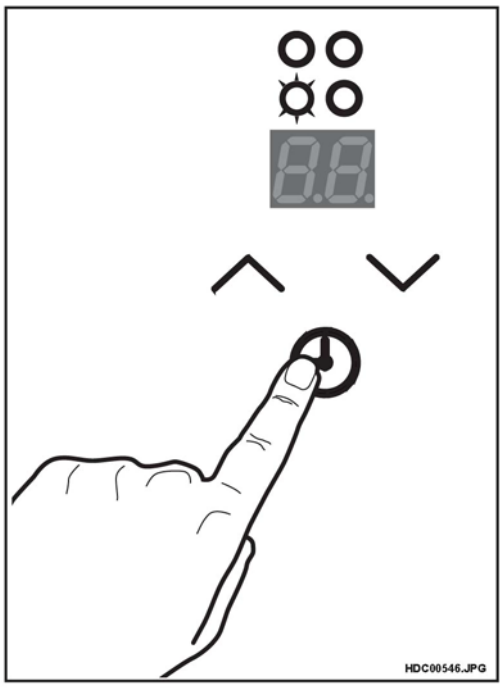


Fig. 24

4. Select the desired cooking time by touching sensors ^ or v.

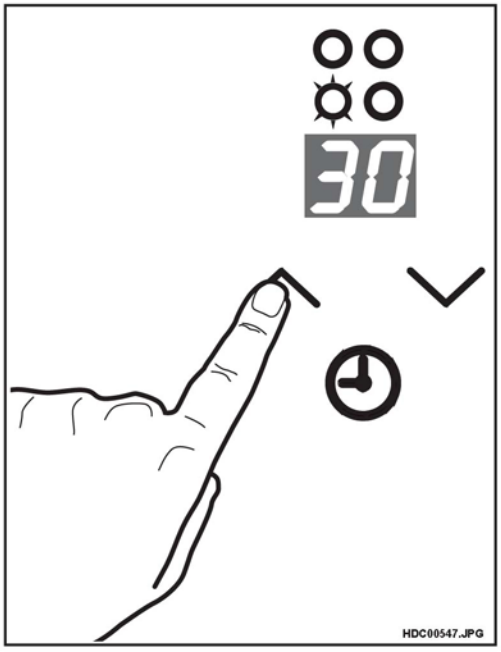


Fig. 25

After the cooking time has been entered, it is no longer possible to change the burner selected.

To change burners, it is necessary to reset the cooking time by touching sensor v, and then changing the burner by touching sensor ◷.

5. A few moments after selection, the timer countdown begins.
6. During the last ten seconds of the countdown, the timer sounds a short buzz to warn the user that the programmed cooking time is about to end.
7. At the end of the time entered, the buzzer sounds. Touch sensor ◷ to switch off the buzzer.

5.10.1.1 Modifying the programmed setting

1. At any time, touch sensors ^ or v to increase or decrease the time entered.

5.10.1.2 Resetting the minute-minder setting

1. Touch sensor v to reduce the time to zero.

Only one burner at a time can be programmed to switch off automatically.

The cooking time can be programmed with the burner lit or off.

For example, after a saucepan of water has been brought to the boil, then the cooking time for the pasta or rice etc. can be entered.

The "residual heat" LEDs remain lit even after the hob has been switched off, and until the grille and the burner have cooled down.

5.10.2 USING THE TIMER WITH THE BURNERS SWITCHED OFF/MINUTE-MINDER FUNCTION

To use the timer as a minute-minder, the hob must be switched on.
To use this function, proceed as follows:

1. If necessary, switch on the hob by touching the ON / OFF touch key for about three seconds. .
2. Touch sensor key to switch on the timer.
3. Touch sensor keys or to select the desired time (maximum setting: 99 minutes).
4. A few instants after entering the selected time, the timer countdown will begin.
5. The display shows the last minute of the countdown second by second.
   When the programmed time has elapsed, the buzzer sounds.
6. To switch off the buzzer, touch sensor key .

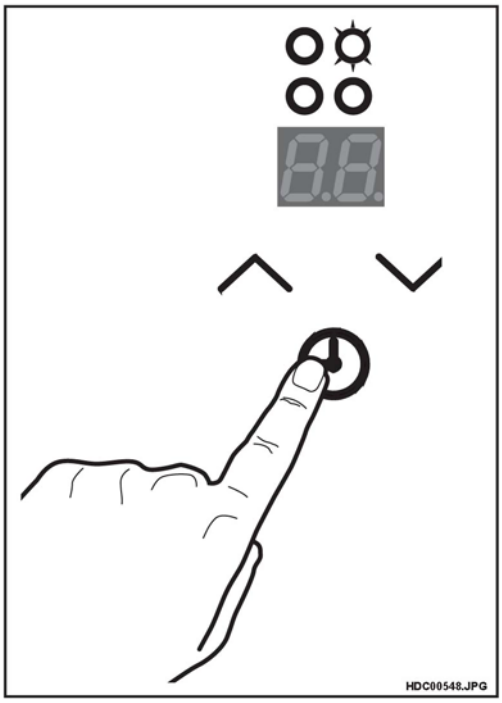


Fig. 26

5.10.2.1 Modifying the minute-minder setting

1. At any time, touch sensors or to increase or decrease the time entered.

5.10.2.2 Resetting the minute-minder setting

1. Touch sensor to reduce the time to zero.

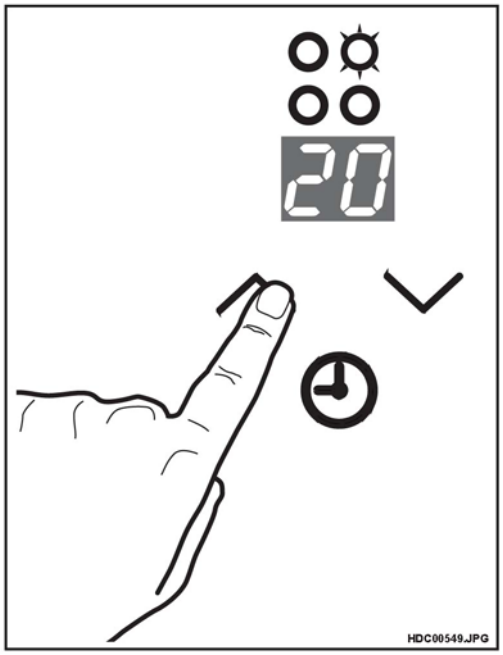


Fig. 27

6. ADAPTING THE HOB TO DIFFERENT TYPES OF GAS

6.1 REPLACING THE NOZZLES

IMPORTANT: Category "II2H3+" hobs (see "Technical Characteristics") are not designed for conversion to operation with town gas.

1. Remove the grilles.
2. Remove the caps and the flame rings from the burners.
3. Use a 7mm hex wrench to unscrew and remove the nozzles.
   Replace the nozzles with those corresponding to the type of gas to be used (see "Technical Characteristics").
4. Re-assemble the burner, performing the same procedure in reverse sequence.
5. Replace the gas calibration label (positioned near the gas inlet coupling) with the label showing the new type of gas. The new label is included in the plastic bag containing the injectors.

If the gas pressure is not as specified for the appliance (or if the pressure is variable), it is necessary to install a pressure regulator suitable for ducted gas (**NOT LPG**), and compliant with UNI-CIG standard 7430, on the inlet hose.
The use of pressure regulators designed for liquid gas (LPG) is permitted, on condition that these are compliant with UNI-CIG standard 7432.

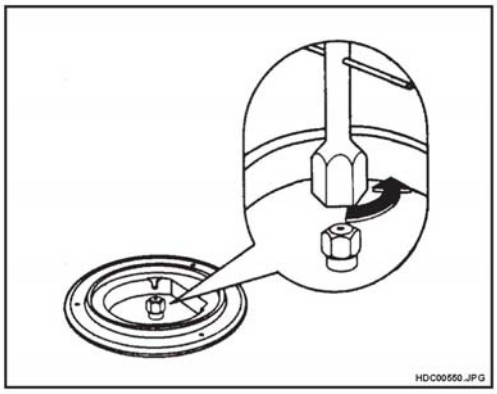


Fig. 28

6.2 ADJUSTING THE HOB FOR THE TYPE OF GAS

1. If necessary, switch on the hob by touching the ON / OFF touch key for about three seconds.
2. Touch sensor key to select the auxiliary burner on the burner display window.
3. Touch sensor key until the display shows "99".
   Then touch sensor key until the display shows "80".
   Then touch the sensor key again until the display shows "83".
   This procedure places the hob in "change gas" mode; the display will show the type of gas currently selected.
4. Touch sensor key to select the type of gas.
   The display shows some codes (from "**n0**" to "**n2"**) which indicate the type of gas relative to the appliance. (See User manual).
5. After selecting the type of gas, switch off the hob by touching the ON/OFF sensor .
6. Switch the appliance on again. The hob will automatically switch on in "user mode".

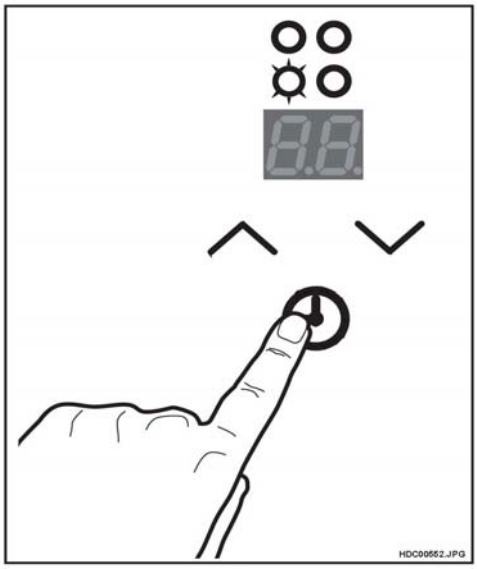


Fig. 29

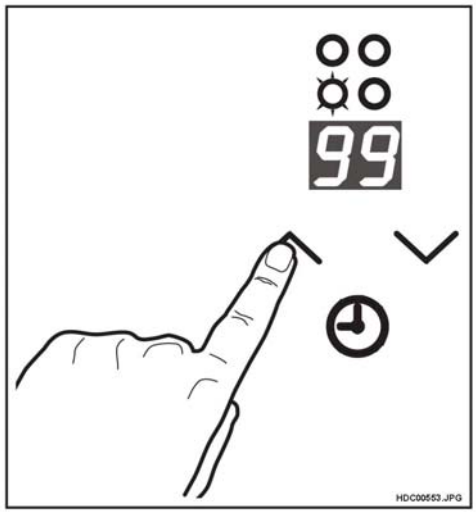


Fig. 30

7. Light all the burners and adjust the flame setting to minimum to check the stability of the flame (rapid changing from a min to a max. and vice versa without switching off the burner).
8. At the same time, check the appearance of the flame (no smoke, yellow bits, no flame detachments).

If the flame is normal and stable, the "gas change" procedure is complete.
However, if the flame is not stable when at minimum setting, it is necessary to make the adjustments described below.

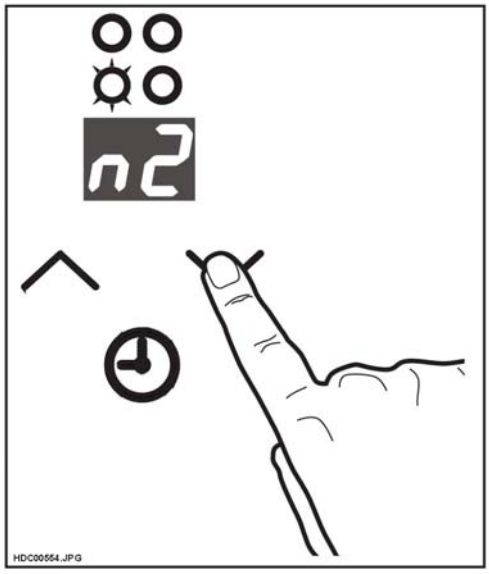


Fig. 31

6.3 ADJUSTING THE MINIMUM SETTING

Proceed as follows to adjust the minimum setting correctly:
1. Carry out the operations described in "Adjusting the hob for the type of gas", steps 1, 2, 3 and 4.
2. Touch the sensor key to ignite the burner to be adjusted.
   The burner will automatically be set to the minimum flame setting.
3. If the minimum flame is in fact too small, the burner will go out. The hob automatically adjusts the minimum flame setting and re-lights the burner.
4. With the burner lit, touch sensor keys or make fine adjustments until the flame is small and even around the entire perimeter of the crown.
5. Touch the ON/OFF sensor to switch off the hob.

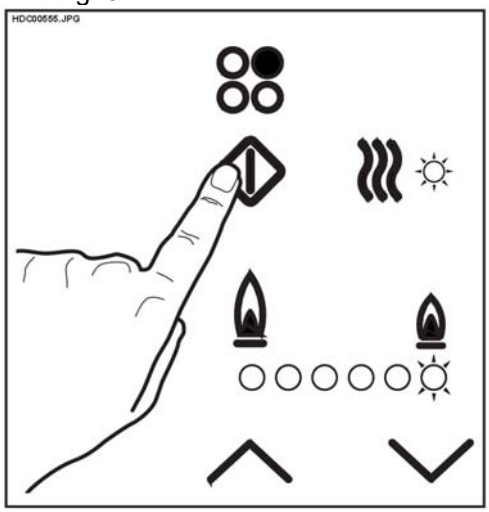


Fig. 32

NOTE :
If after adjusting the minimum setting, the flame is still producing smoke, with yellow bits or possible flame detachments, it is necessary to check the pressure and eventually type and composition of the gas.

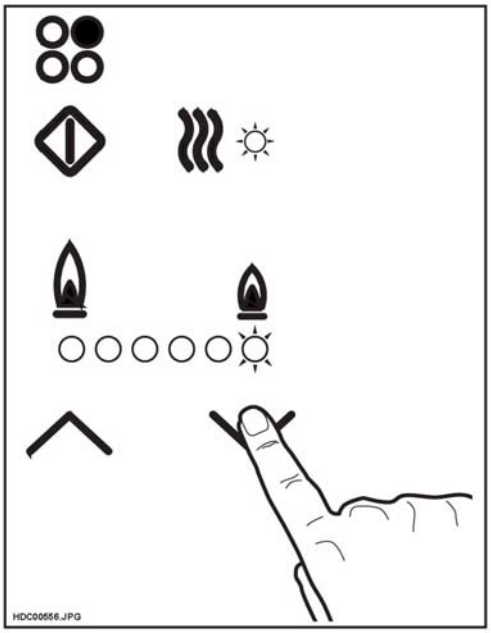


Fig. 33

7. ERROR CODES

The electronic control system performs an internal autodiagnostics routine. If an operating malfunction is detected, the corresponding error code is displayed.

To display the error codes, it is sufficient to touch the "clock" sensor and then select the inoperative burner. The error code will be displayed automatically (see Fig. 39 and 40).
If the malfunction affects not one single burner but the entire hob, the same code will be displayed for each burner.

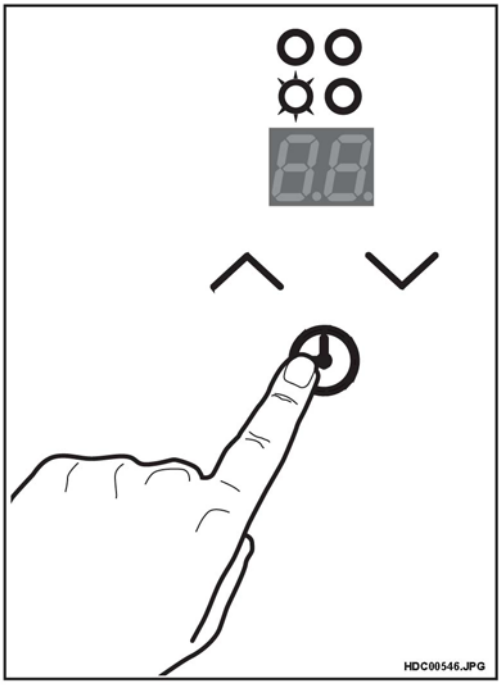


Fig. 39

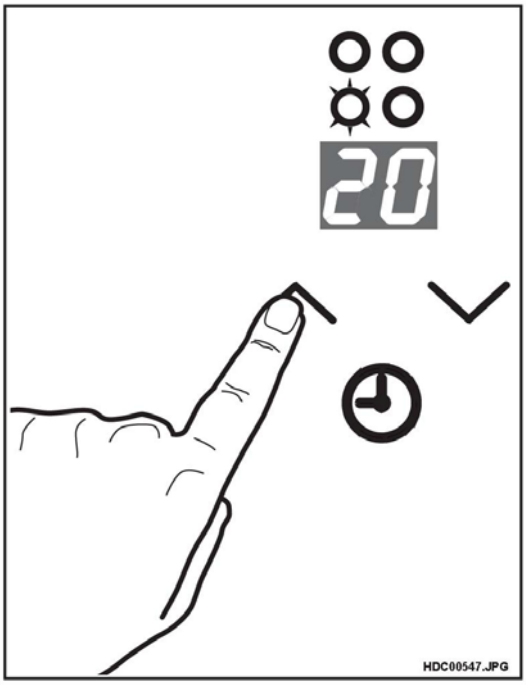


Fig. 40

The table below lists the various error codes with their meanings.

ERROR COSE	BLOCK	ERROR CODE DESCRIPTION	CAUSE
0	--	**NO ERROR**	Normal condition for an operating burner.
1	BURNER	**NO FLAME AFTER RETRY**	Condition of the burner after 3 consecutive attempts of failed switching on.
2	BURNER	**EV FEEDBACK FAULT**	Condition of the burner in case of "*solenoid valve feedback*" wrong.
3	BURNER	**SM PHASE 1 FAULT**	Condition of the burner in case of error signal referring to the relative valve (wrong contacts on the cables).
4	BURNER	**SM PHASE 2 FAULT**	Condition of the burner in case of error signal referring to the relative valve (wrong contacts on the cables).
5	BURNER	**SM PHASE 3 FAULT**	Condition of the burner in case of error signal referring to the relative valve (wrong contacts on the cables).
6	BURNER	**SM PHASE 4 FAULT**	Condition of the burner in case of error signal referring to the relative valve (wrong contacts on the cables).
7	BURNER	**SM ENABLE FAULT**	Condition of the burner in case of global error signal or referred to more simultaneous errors.
8	BURNER	**GENERIC FAULT**	Generic error condition of the burner in case the cause does not have a specific code.
9	SYSTEM	**TEMPERATURE OUT OF RANGE FAULT**	Condition of the burner in case the temperature detected on the **power board** exceeds 105°C.
10	BURNER	**CONTINUOUS RUN**	Condition of the burner in case of continuous operation longer than 4 hours without any alteration of the flame level.
11	SYSTEM	**POWER SUPPLY VPP FAULT**	Condition of the burner in case the ratio between the supply values on the power board is not correct. (12,8 V and 5 V).
12	SYSTEM	**POWER SUPPLY VDD FAULT**	Condition of the burner in case the ratio between the supply values on the power board is not correct. (3,3 V e 5 V).
14	BURNER	**ABNORMAL TC CONDITION**	Condition of the burner in case of anomalous flame (parasite flame, incorrect thermocouple signal).
15	SYSTEM	**SYSTEM LOCKEED FATAL FAULT**	Condition of double error on a burner valve on all burners (internal controls to the system regarding the different error signals).
16	SYSTEM	**NTC SENSOR FAULT**	Condition of each burner in case of incorrect temperature detection on the **power board**.
17	SYSTEM	**TIME BASE RATIO FAULT**	Condition of each burner in case the internal clock frequency ration is incorrect (32 kHz and 8MHz).
18	SYSTEM	**AD CONVERTER FAULT**	Condition of each burner in case the valve control is incorrect (the "*ADConverter*" on the power board does not give the requested measurement).
19	SYSTEM	**DATA MEMORY FAULT**	Condition of each burner in case an error in RAM on the power board is detected.
20	SYSTEM	**PROGRAM CONFIGURATION MEMORY FAULT**	Condition of each burner in case an error in ROM on the power board is detected.

ERROR COSE	BLOCK	ERROR CODE DESCRIPTION	CAUSE
21	SYSTEM	**EPROM MEMORY WRITE FAULT**	Condition of each burner in case a writing error in EEPROM on the power board is detected.
22	SYSTEM	**DATA OUT RANGE FAULT**	Condition of each burner in case an error on the EEPROM of the power board (configuration parameter not acceptable).
23	SYSTEM	**SOFTWARE WATCH DOG FAULT**	Condition of each burner in case of block or anomalous timing of one of the system tasks.
24	SYSTEM	**LOGICAL MONITORING TRACING FAULT**	Condition of each burner in case of anomalous or failed execution of a code section.

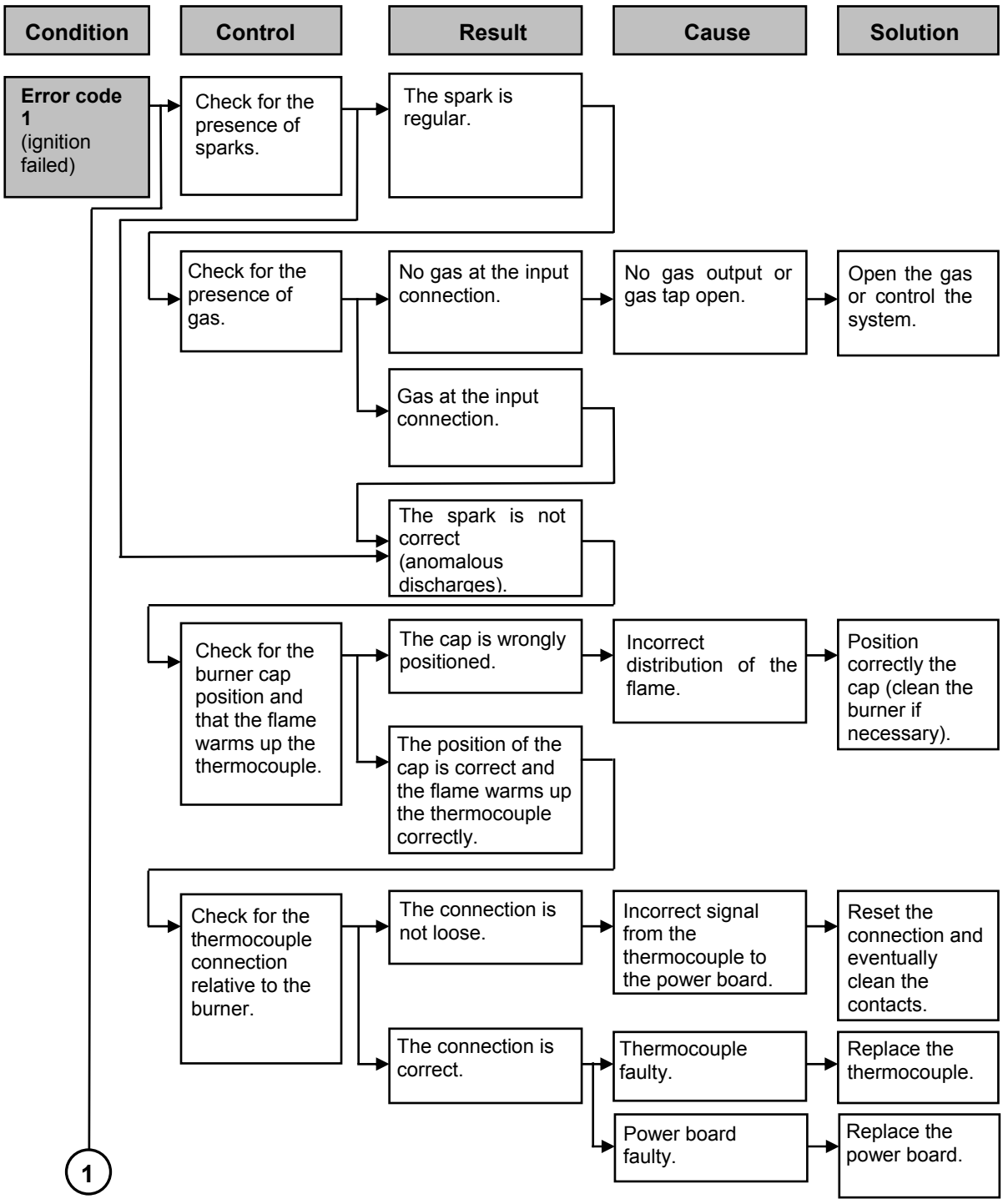
8. TROUBLE-SHOOTING

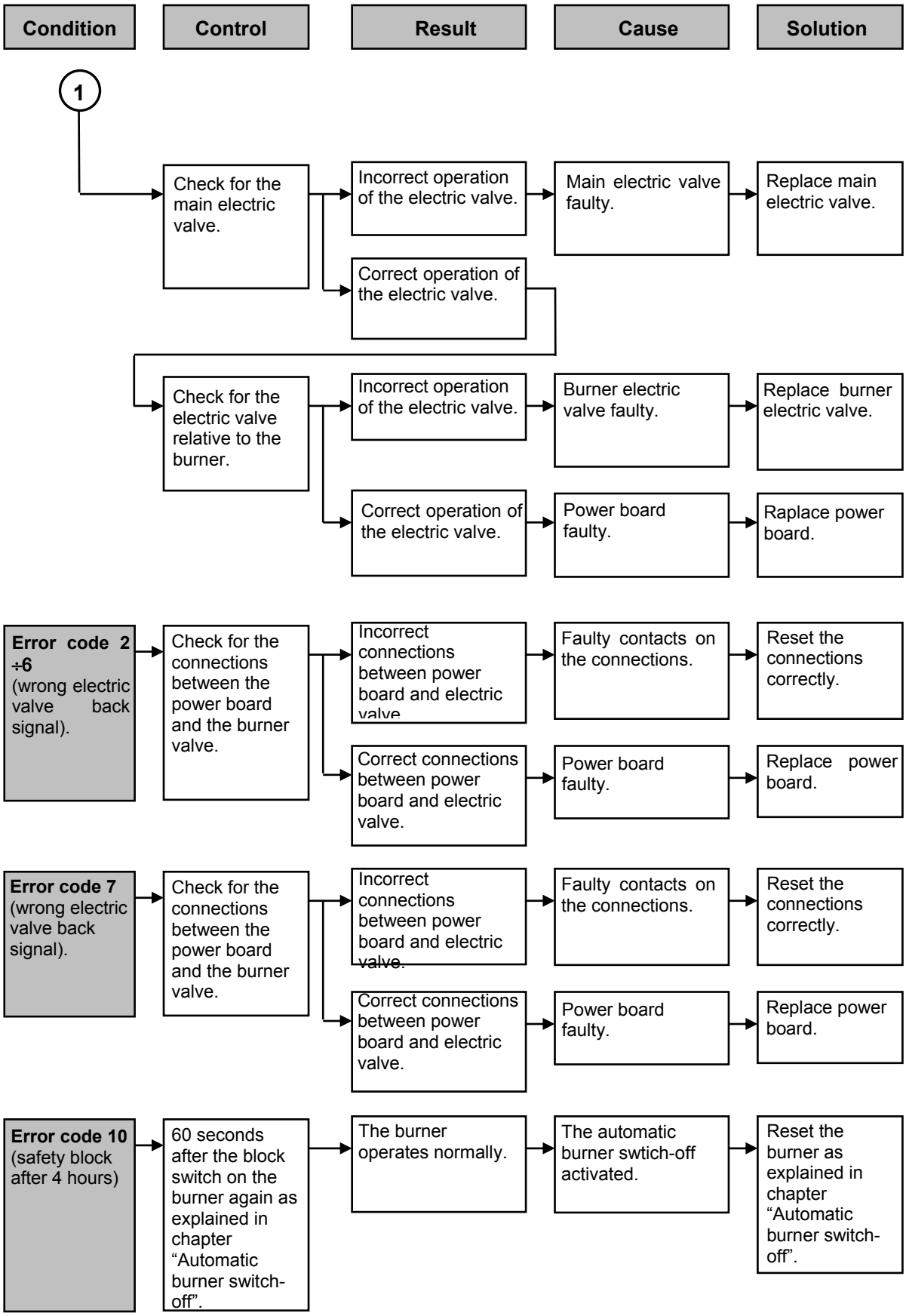
8.1 TROUBLE-SHOOTING USING ERROR CODES

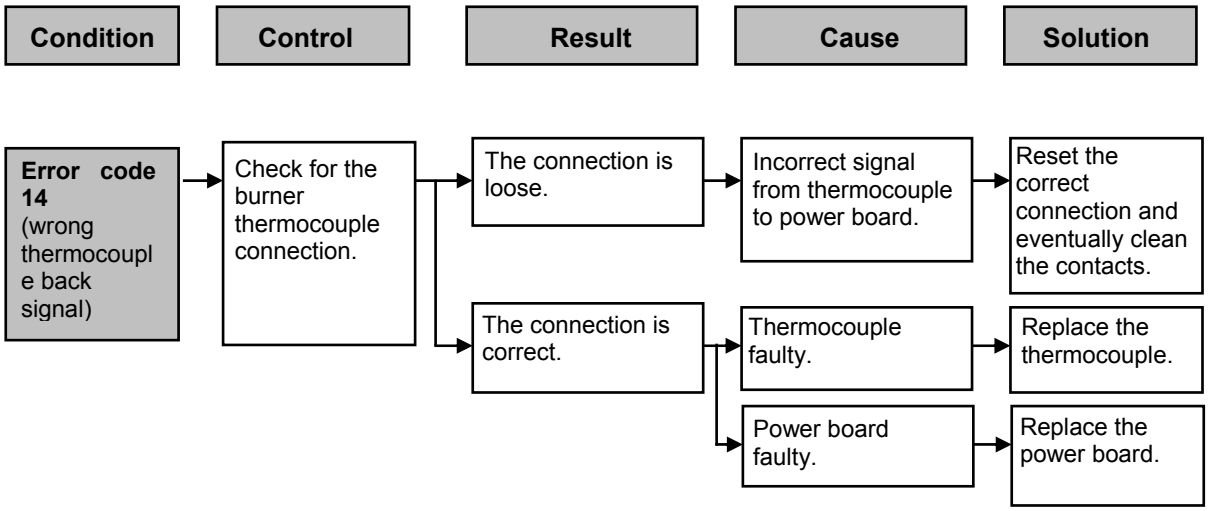
Trouble-shooting using error codes identifies the component or the exact section of the circuit in which the fault has occurred.
When the control circuit detects a malfunction, the error code is displayed and depending on the code, the operation of the burner is stopped or the appliance is switched off. Before executing a trouble-shooting, check the error code as explained in the chapter “Error codes” and then unlock the burner or the whole system (see chapter “Automatic burner switch-off”).

8.1.1 ERRORS WITH BURNER BLOCK

The error codes with block of the burner are the following:
1, 2, 3, 4, 5, 6, 7, 8, 10 e 14.

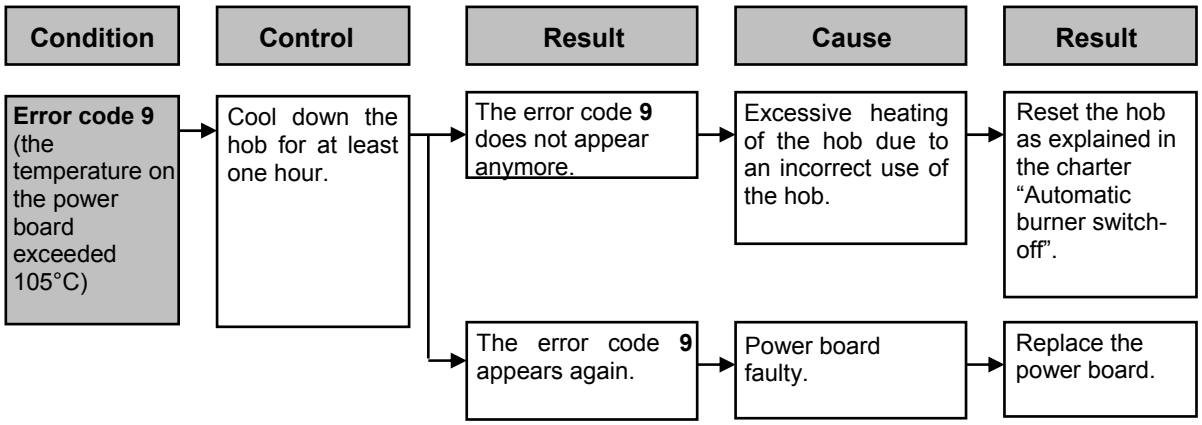

Condition
Control
Result
Cause
Solution
Error code 1 (ignition failed)
Check for the presence of sparks.
The spark is regular.
Check for the presence of gas.
No gas at the input connection.
No gas output or gas tap open.
Open the gas or control the system.
Gas at the input connection.
The spark is not correct (anomalous discharges).
Check for the burner cap position and that the flame warms up the thermocouple.
The cap is wrongly positioned.
Incorrect distribution of the flame.
Position correctly the cap (clean the burner if necessary).
The position of the cap is correct and the flame warms up the thermocouple correctly.
Check for the thermocouple connection relative to the burner.
The connection is not loose.
Incorrect signal from the thermocouple to the power board.
Reset the connection and eventually clean the contacts.
The connection is correct.
Thermocouple faulty.
Replace the thermocouple.
Power board faulty.
Replace the power board.
1


Condition
Control
Result
Cause
Solution
1
Check for the main electric valve.
Incorrect operation of the electric valve.
Main electric valve faulty.
Replace main electric valve.
Correct operation of the electric valve.
Check for the electric valve relative to the burner.
Incorrect operation of the electric valve.
Burner electric valve faulty.
Replace burner electric valve.
Correct operation of the electric valve.
Power board faulty.
Raplace power board.
Error code 2 ÷6 (wrong electric valve back signal).
Check for the connections between the power board and the burner valve.
Incorrect connections between power board and electric valve
Faulty contacts on the connections.
Reset the connections correctly.
Correct connections between power board and electric valve.
Power board faulty.
Replace power board.
Error code 7 (wrong electric valve back signal).
Check for the connections between the power board and the burner valve.
Incorrect connections between power board and electric valve.
Faulty contacts on the connections.
Reset the connections correctly.
Correct connections between power board and electric valve.
Power board faulty.
Replace power board.
Error code 10 (safety block after 4 hours)
60 seconds after the block switch on the burner again as explained in chapter “Automatic burner switch-off”.
The burner operates normally.
The automatic burner swtich-off activated.
Reset the burner as explained in chapter “Automatic burner switch-off”.


Condition
Control
Result
Cause
Solution
Error code 14 (wrong thermocouple back signal)
Check for the burner thermocouple connection.
The connection is loose.
Incorrect signal from thermocouple to power board.
Reset the correct connection and eventually clean the contacts.
The connection is correct.
Thermocouple faulty.
Replace the thermocouple.
Power board faulty.
Replace the power board.

8.1.2 TROUBLE-SHOOTING WITHOUT ERROR CODES

The error codes with total block of the system are the following:
9, 11, 12, 15, 16, 17, 18, 19, 20, 21, 22, 23 and 24.


Condition
Control
Result
Cause
Result
Error code 9 (the temperature on the power board exceeded 105°C)
Cool down the hob for at least one hour.
The error code 9 does not appear anymore.
Excessive heating of the hob due to an incorrect use of the hob.
Reset the hob as explained in the charter "Automatic burner switch-off".
The error code 9 appears again.
Power board faulty.
Replace the power board.

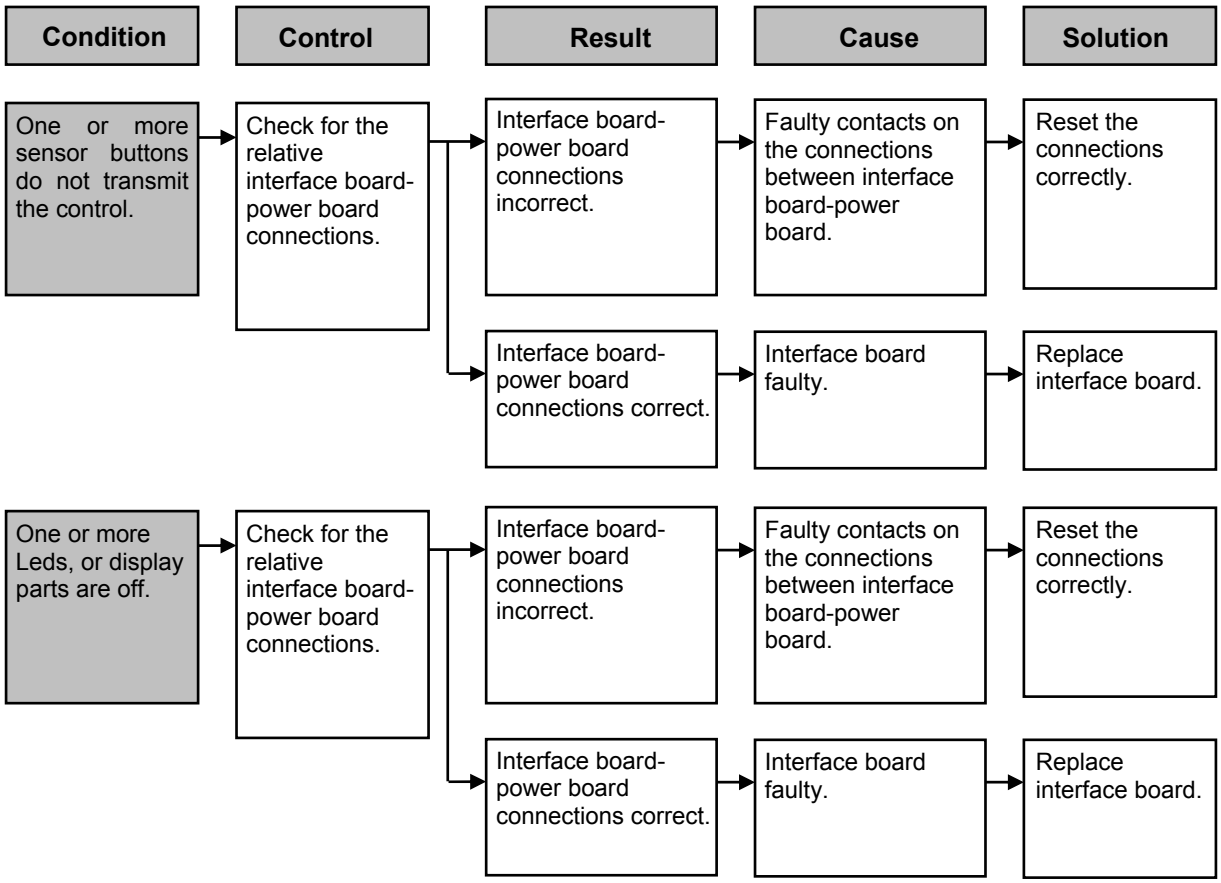
The error codes 11, 12, 15, 16, 17, 18, 19, 20, 21, 22, 23 and 24 are internal controls for the verification of the electronic part. When these codes appear, the only solution is the replacement of the power board.

8.1.2.1 – SUMMARY TABLE OF ERROR CODES / ACTIONS

SUMMARY TABLE ***ERROR CODE / ACTION***		
ERROR CODE	**BLOCK**	**ACTION**
0	--	--
1	BURNER	1 Verify the presence of sparks. 2 Verify the presence of gas. 3 Verify the sparks. 4 Verify the position of the burner cap and that the flame warms up the thermocouple. 5 Verify the thermocouple connections. 6 Verify the main electric valve. 7 Verify the burner electric valve. 8 Replace the power board.
2	BURNER	1 Verify board connections / electric valve of relative burner. 2 Replace the power board.
3	BURNER	1 Verify board connections / electric valve of relative burner. 2 Replace the power board.
4	BURNER	1 Verify board connections / electric valve of relative burner. 2 Replace the power board
5	BURNER	1 Verify board connections / electric valve of relative burner. 2 Replace the power board
6	BURNER	1 Verify board connections / electric valve of relative burner. 2 Replace the power board
7	BURNER	1 Verify board connections / electric valve of relative burner. 2 Replace the power board
8	BURNER	1 Replace the power board.
9	SYSTEM	1 Wait cooling down. 2 Replace the power board.
10	BURNER	1 Unlock the burner.
11	SYSTEM	1 Replace the power board.
12	SYSTEM	1 Replace the power board.
14	BURNER	1 Verify the thermocouple connections. 2 Replace the thermocouple. 3 Replace the power board.
15	SYSTEM	1 Replace the power board.
16	SYSTEM	1 Replace the power board.
17	SYSTEM	1 Replace the power board.
18	SYSTEM	1 Replace the power board.
19	SYSTEM	1 Replace the power board.
20	SYSTEM	1 Replace the power board.
21	SYSTEM	1 Replace the power board.
22	SYSTEM	1 Replace the power board.
23	SYSTEM	1 Replace the power board.
24	SYSTEM	1 Replace the power board.

8.2 TROUBLESHOOTING WITHOUT ERROR CODE

Some malfunctioning conditions of the hob can appear without any indication of an error code. Please find below some troubleshooting cases without error code.


Condition
Control
Result
Cause
Solution
One or more sensor buttons do not transmit the control.
Check for the relative interface board-power board connections.
Interface board-power board connections incorrect.
Faulty contacts on the connections between interface board-power board.
Reset the connections correctly.
Interface board-power board connections correct.
Interface board faulty.
Replace interface board.
One or more Leds, or display parts are off.
Check for the relative interface board-power board connections.
Interface board-power board connections incorrect.
Faulty contacts on the connections between interface board-power board.
Reset the connections correctly.
Interface board-power board connections correct.
Interface board faulty.
Replace interface board.

9. ACCESSIBILITY

9.1 REMOVAL OF TOP FROM THE CABINET

To remove the top from the cabinet, move the top from the lower part.

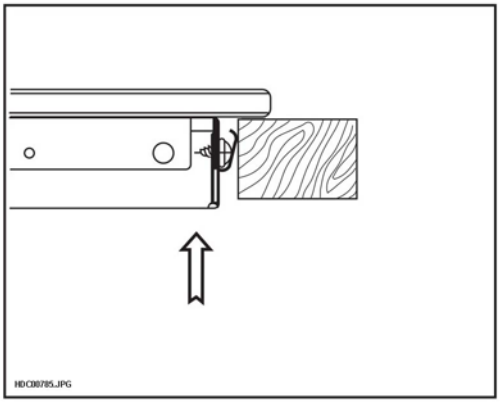


Fig. 41

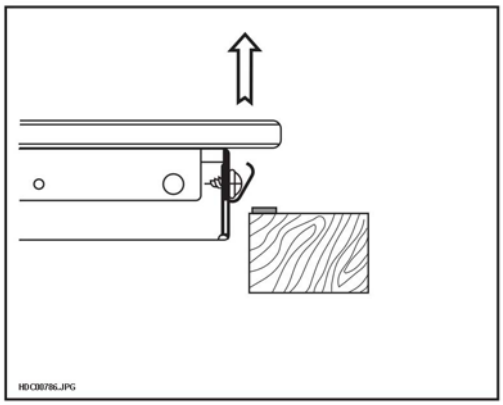


Fig. 42

9.2 REMOVAL OF GAS SUPPLY CONNECTION

After closing the gas supply, switched off the power supply, remove the top and positioned the top so as to access the gas connection easily (Ex.: by using wood trims to keep the top raised) detach the gas delivery pipe (see Fig. 42).

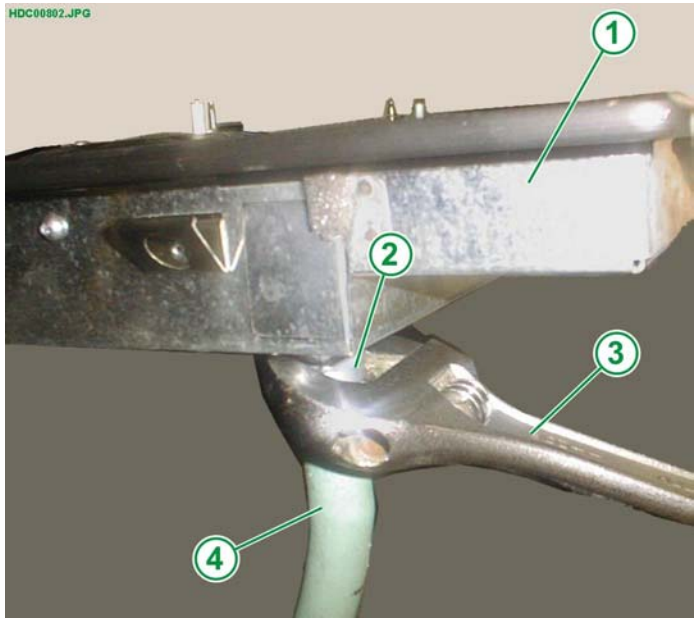


Fig. 43

1 - TOP CASING
2 - 24 mm SPANNER
3 - GAS CONNECTION NUT
4 - GAS DELIVERY PIPE

9.3 REMOVAL OF UPPER TOP

To remove the glass upper top after extracting the top from the cabinet:
- Remove the grids and the flame spreader crowns of the burners (see Pic. 43).

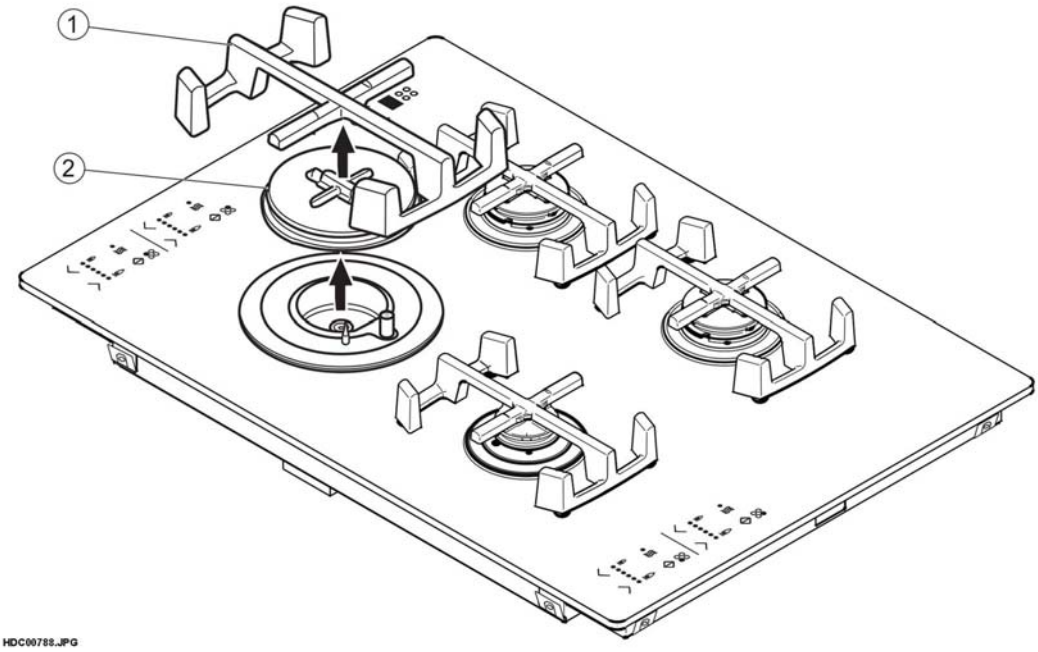


Fig. 44

1 - GRID
2 - FLAME SPREADER CROWN

- Remove the 6 screws which fit the upper glass (see Fig. 44).

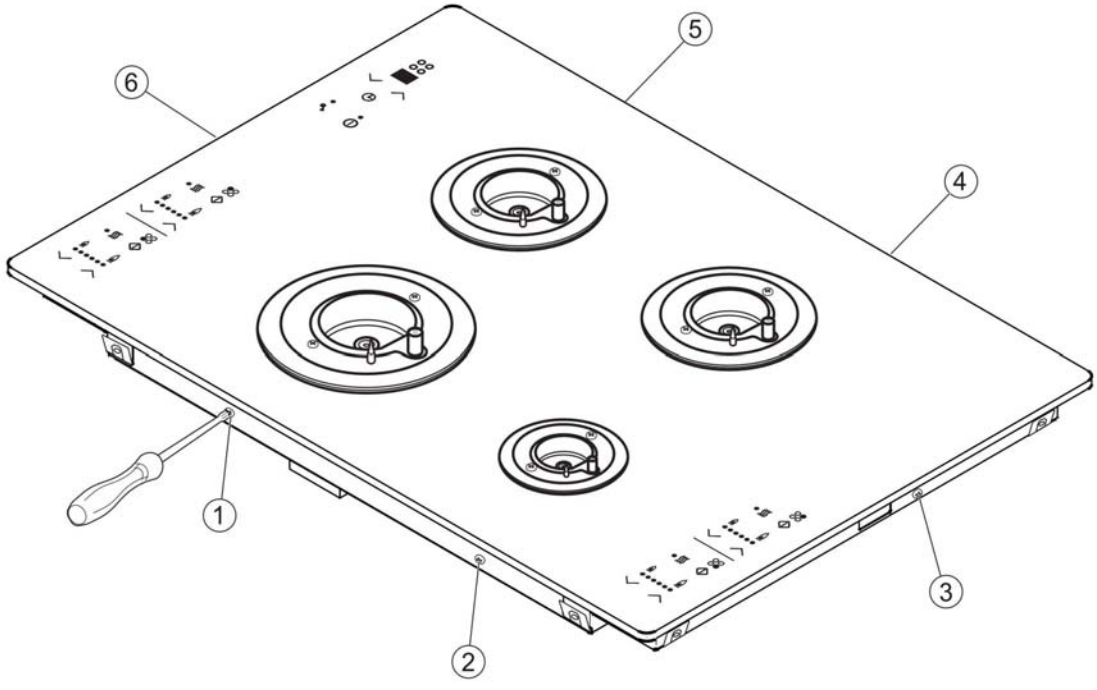


Fig. 45

1 ÷ 6 - FIXING SCREWS OF THE UPPER GLASS

- Remove the fixing screws of the burners (2 for each burner, see Fig. 45).

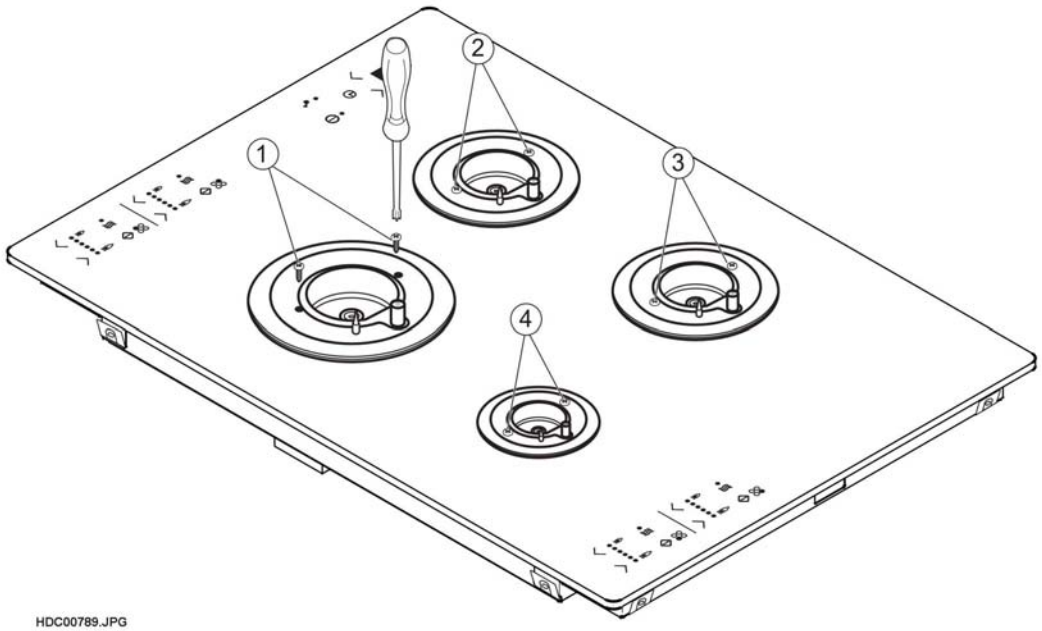


Fig. 46

1 - FIXING SCREWS RAPID BURNER
2 - FIXING SCREWS SEMI-RAPID BURNER (REAR LEFT)
3 - FIXING SCREWS SEMI-RAPID BURNER (REAR RIGHT)
4 - FIXING SCREWS AUXILIARY BURNER

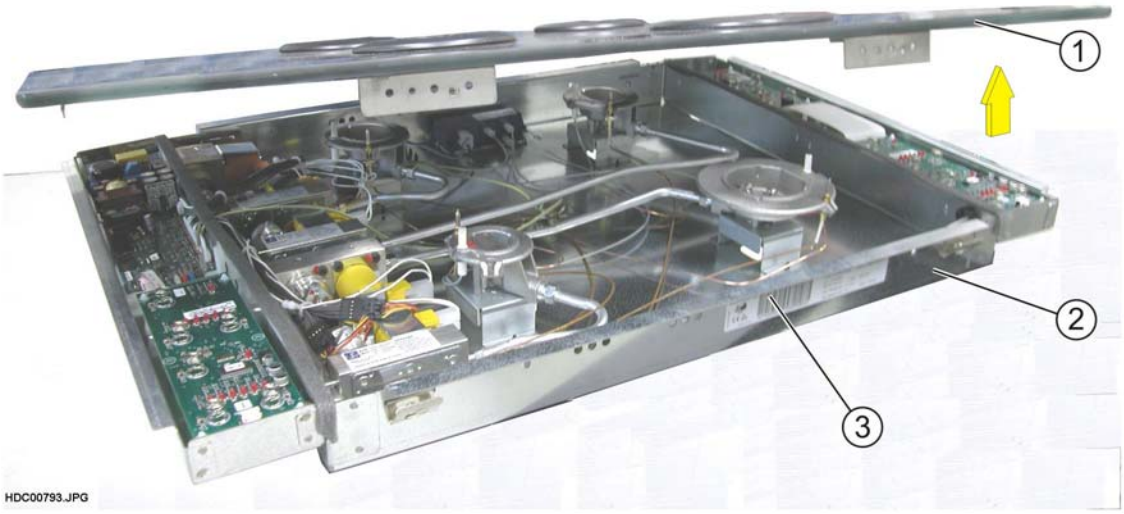


Fig. 47

1 - GLASS UPPER TOP
2 - TOP EXTERNAL CASING
3 – POSITION OF SERIAL NO. PLATE

9.4 ACCESS TO COMPONENT ZONE

After removing the upper top the various internal components can be accessed (see Fig. 48) .

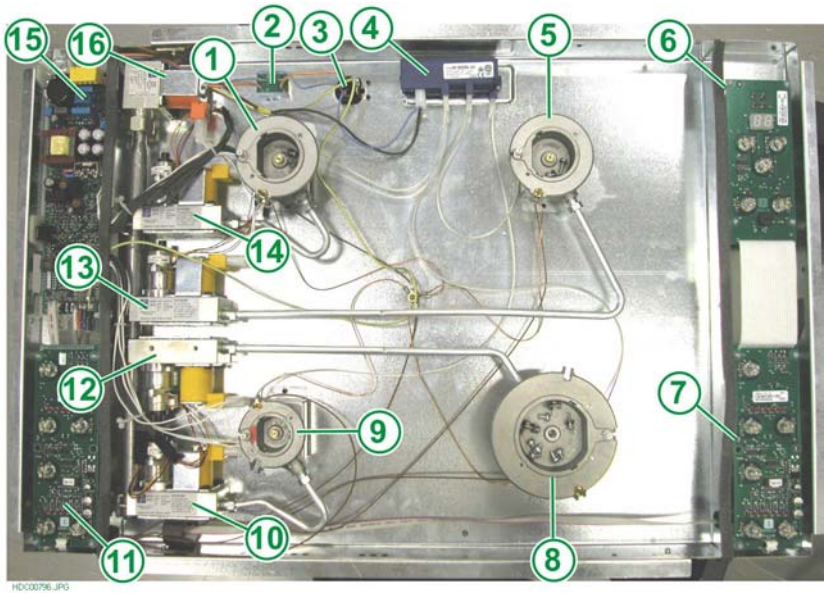


Fig. 48

1 - LEFT REAR BURNER (SEMI-RAPID)
2 - INTERFERENCE SUPPRESSOR
3 - JUNCTION BOX
4 - IGNITER
5 - RIGHT REAR BURNER (SEMI-RAPID)
6 - MAIN INTERFACE BOARD
7 - POWER BOARD
8 - RIGHT FRONT BURNER (RAPID)
9 - LEFT FRONT BURNER (AUXILIARY)
10 - LEFT FRONT BURNER VALVE
11 - LEFT INTERFACE BOARD
12 - RIGHT FRONT BURNER VALVE
13 - LEFT REAR BURNER VALVE
14 - RIGHT REAR BURNER VALVE
15 - POWER BOARD
16 - MAIN SAFETY VALVE

9.4.1 DISMOUNTING THE BURNER CONTROL ELECTRICA VALVES

To dismount the burner control electric valve it is necessary:
- Remove the gas output fixing nut from the electric valves (see Fig. 49 Pos. 1).
- Remove the two screws of the electric valve fixing brackets loosen previously the lower screws.
- Detach the power supply connector.

NOTE: The upper screws can be accessed after dismounting the left interface board and the power board. The lower screws can be accessed from the left lower side part of the hob (see Fig. 50).

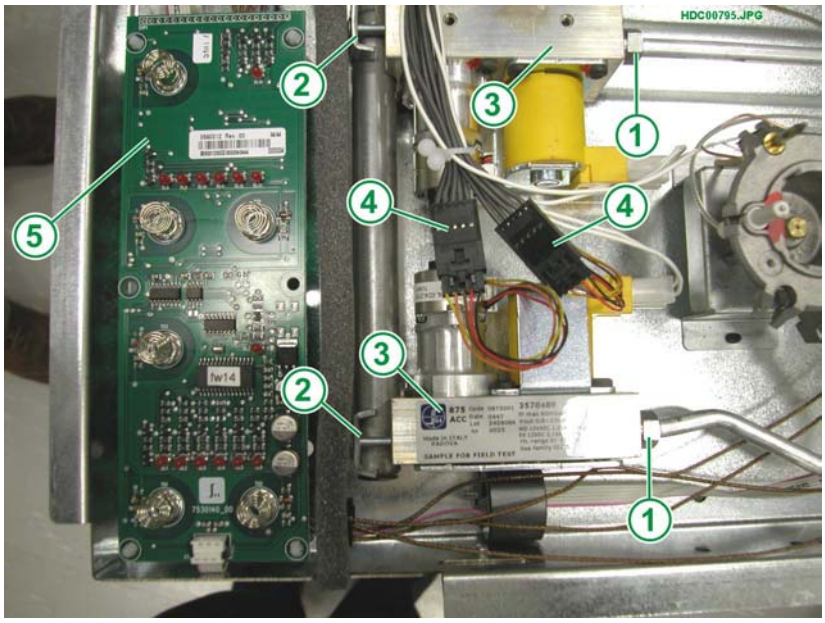


Fig. 49

1 - GAS OUTPUT FIXING NUT
2 - GAS INPUT FIXING BRACKET
3 - BURNER CONTROL ELECTRIC VALVE
4 - LEFT INTERFACE BOARD
5 - ELECTRIC VALVE POWER SUPPLY CONNECTOR

Fig. 50

1 - SERVICE SOCKET FOR THE PROGRAMMATION
2 - LOWER SCREW OF FIXING BRACKET OF LEFT FRONT BURNER VALVE
3 - LOWER SCREW OF FIXING BRACKET OF RIGHT FRONT BURNER VALVE
4 - LOWER SCREW OF FIXING BRACKET OF RIGHT REAR BURNER VALVE
5 - LOWER SCREW OF FIXING BRACKET OF LEFT REAR BURNER VALVE

NOTE : After remounting the electric valves, pay attention to fix the screws of the fixing brackets carefully and check the gas seal.

9.4.2 DISMOUNTING THE MAIN SAFETY ELECTRIC VALVE

To dismount the main safety electric valve after removing the gas input connection:
- Remove the electric valve connection nut – feed pipe (see Fig. 52).
- Remove the two fixing screws of the electric valve placed at the top bottom (see Fig. 51).
- Detach the power supply cables.

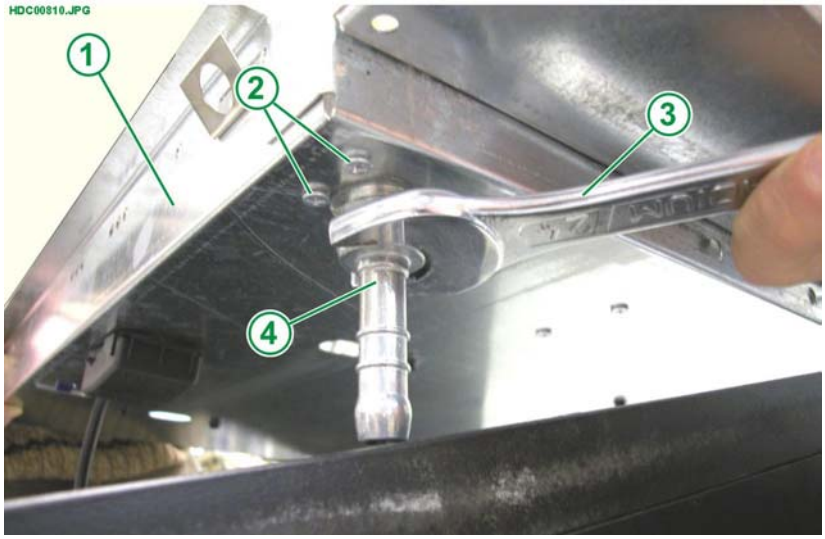


Fig. 51

1 - TOP CASING
2 - FIXING SCREWS OF MAIN SAFETY ELECTRIC VALVE
3 - 24 mm SPANNER
4 - GAS INPUT CONNECTION

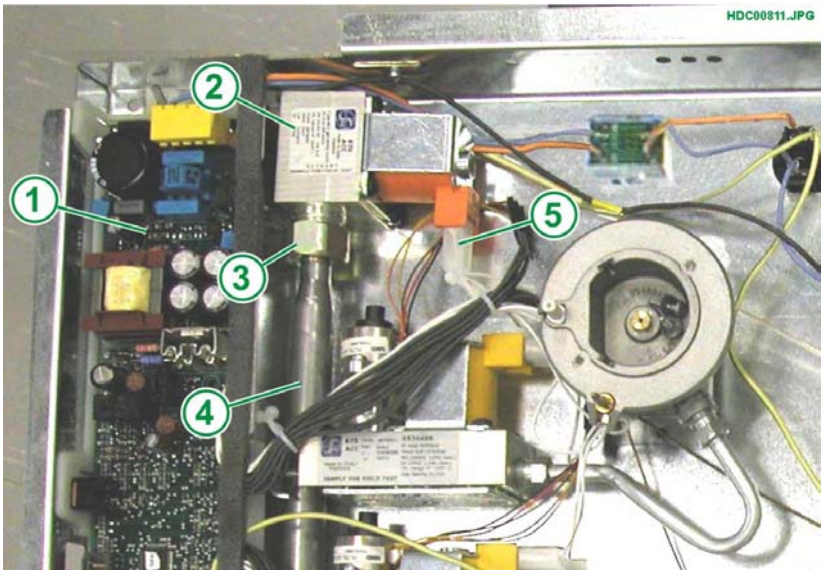


Fig. 52

1 - POWER BOARD
2 - MAIN SAFETY ELECTRIC VALVE
3 - ELECTRIC VALVE – FEED PIPE CONNECTION NUT
4 - FEED PIPE
5 - ELECTRIC VALVE CONNECTIONS

NOTE : After remounting the electric valve, pay attention to fix the electric valve-feed pipe connection nut and check the gas seal.

9.4.3 REPLACEMENT OF INTERFACE BOARDS

To replace the interface boards:
- Release the board from the fixing plastic clips (see Fig. 54).
- Detach the connector.

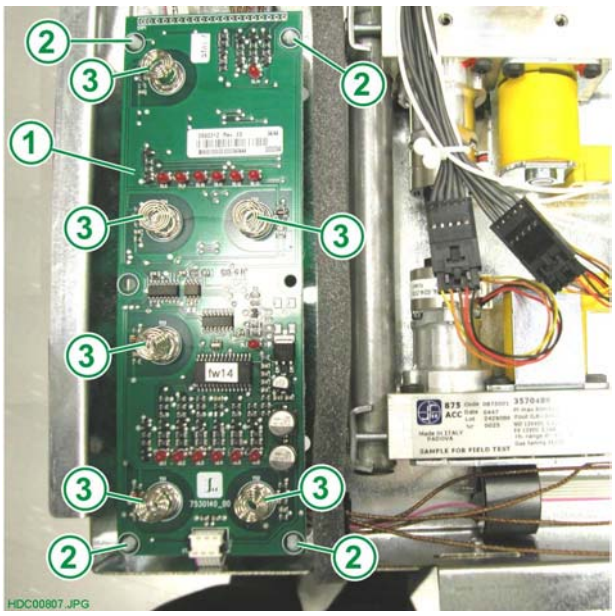


Fig. 53

1 - INTERFACE BOARD
2 - FIXING CLIPS
3 - SENSOR CONTROL ZONES

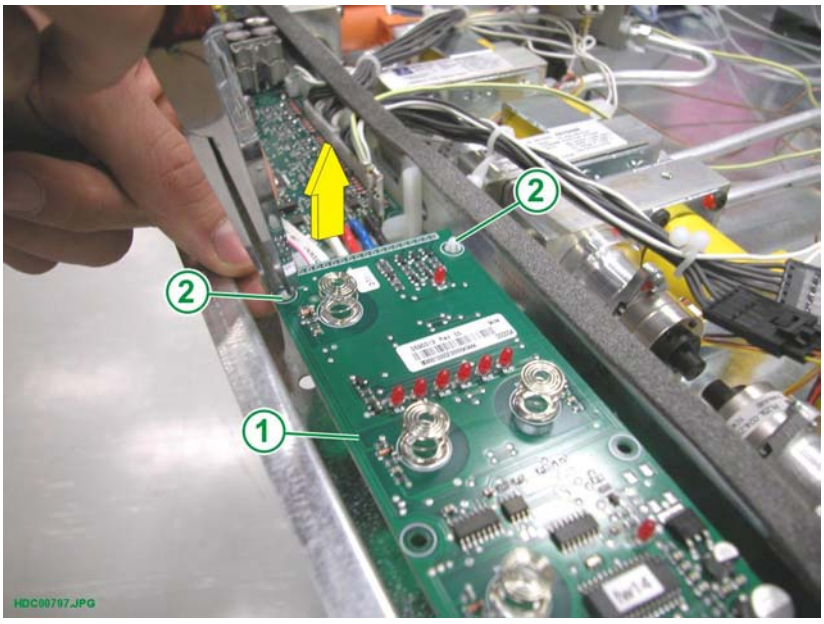


Fig. 54

1 - INTERFACE BOARD
2 - FIXING CLIPS

9.4.4 REPLACEMENT OF POWER BOARD

To replace the power board:
- Raise the two metallic tabs by using a screwdriver (see Fig. 55 and 56).
- Detach the connectors and the connection terminals making a sign for the position to facilitate the remounting.
- Remove the board assembly from the top.

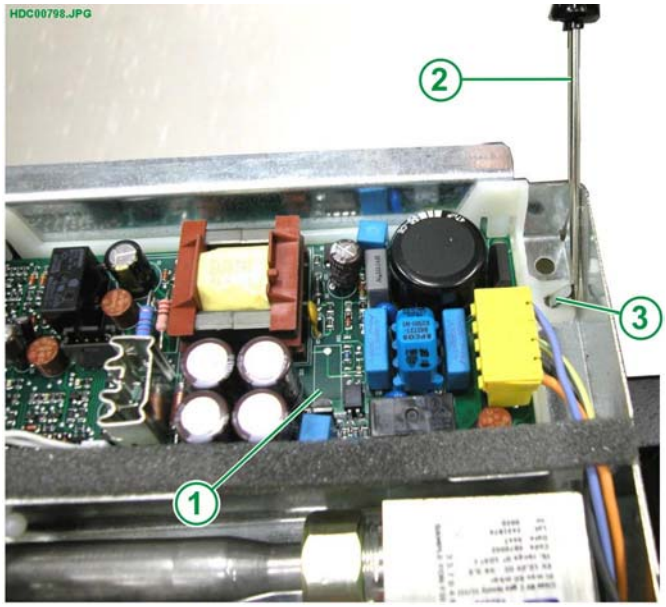


Fig. 55
1 - POWER BOARD
2 - SCREWDRIVER
3 - FIXING TAB

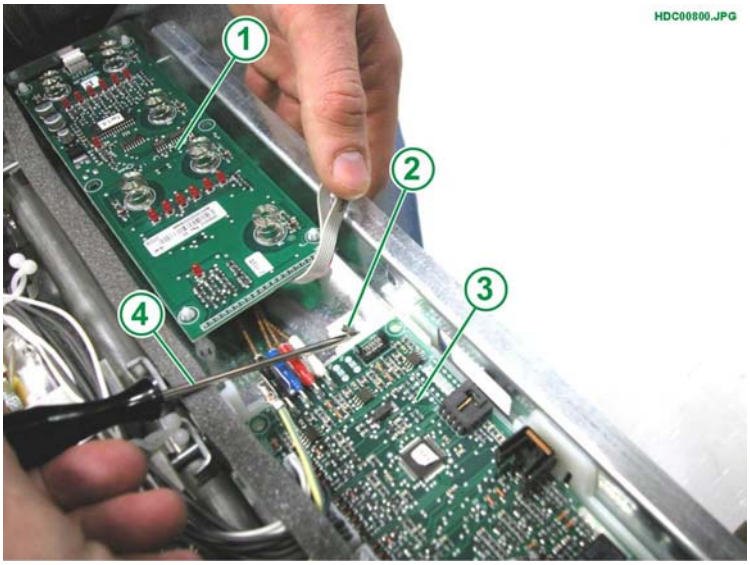


Fig. 56
1 - INTERFACE BOARD
2 - FIXING TAB
3 - POWER BOARD
4 - SCREWDRIVER

To remove the power board from the plastic support release the board from its fixing hooks (see Fig. 56).

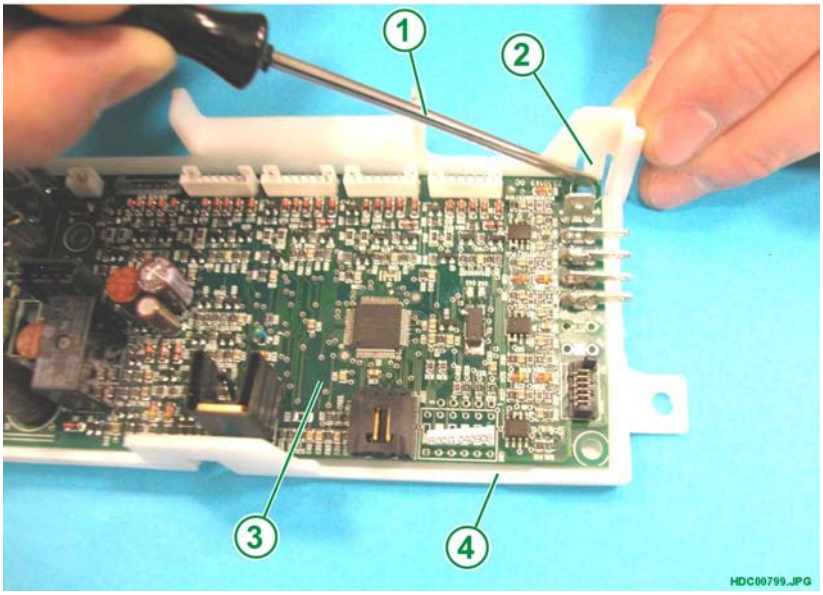


Fig. 57
1 - SCREWDRIVER
2 - FIXING HOOK
3 - POWER BOARD
4 - PLASTIC SUPPORT

9.4.5 – REPLACEMENT OF BURNERS

To replace a burner:
- Dismount the spark plug and the thermocouple.
- Remove the nozzle.
- Remove the supply pipe – burner fixing nut.
- Remove the 2 burner fixing screws placed on the top lower part (see Fig. 59)

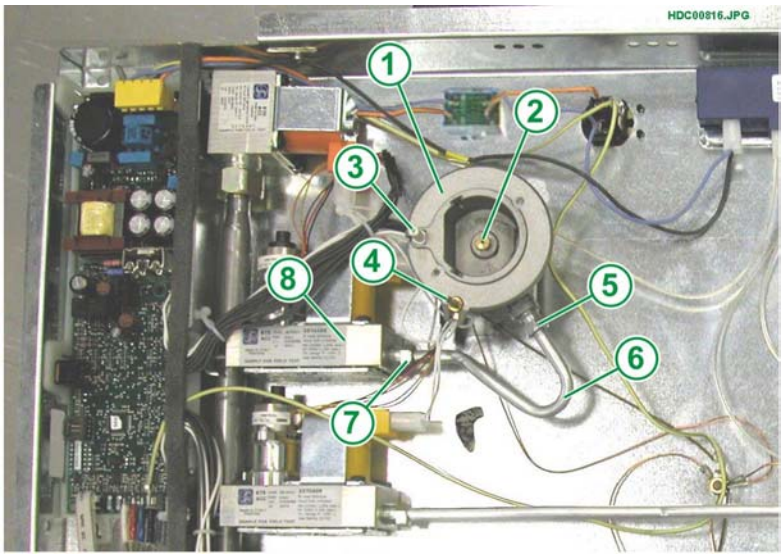


Fig. 58
1 - BURNER
2 - NOZZLE
3 - IGNITION SPARK PLUG
4 - THERMOCOUPLE
5 - GAS SUPPLY PIPE FIXING NUT - BURNER
6 - GAS SUPPLY PIPE
7 - GAS SUPPLY PIPE FIXING NUT - ELECTRIC VALVE
8 - BURNER CONTROL ELECTRIC VALVE

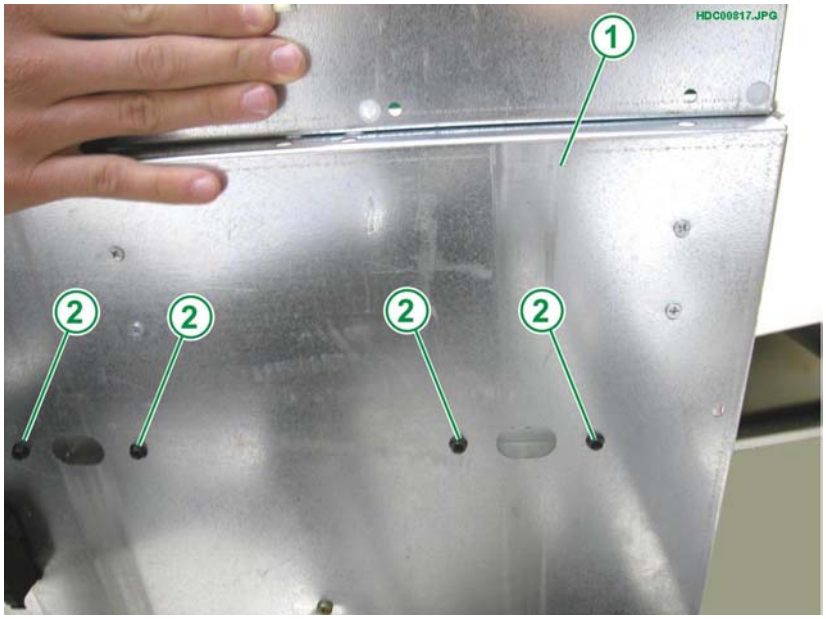


Fig. 59

1 - TOP BOTTOM
2 - BURNER FIXING SCREWS

9.4.6 REPLACEMENT OF THERMOCOUPLES

To replace the thermocouples:
- Release the thermocouple removing the fixing spring placed in the lower side part of the burner.
- Detach the thermocouple terminal placed on the power board.
  (see Fig. 61)

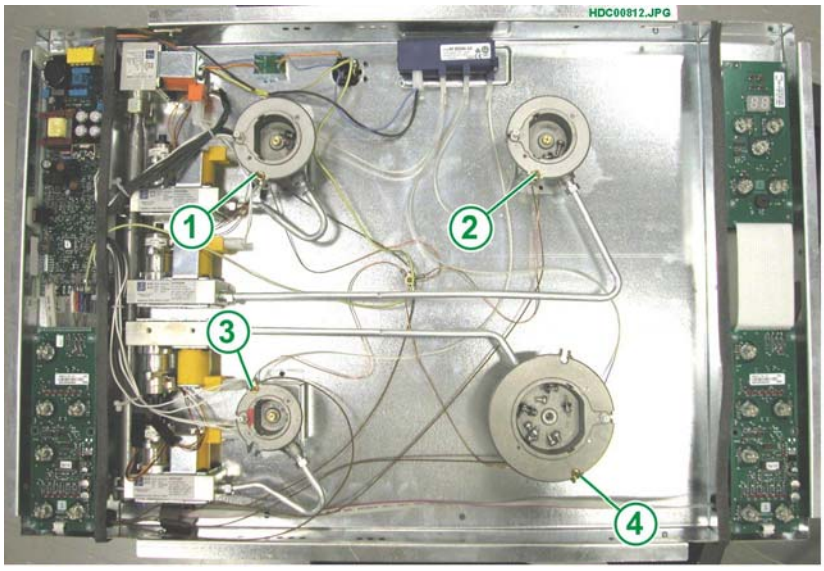


Fig. 60

1 - THERMOCOUPLE TC4 (WHITE - LEFT REAR BURNER)
2 - THERMOCOUPLE TC3 (RED - RIGHT REAR BURNER)
3 - THERMOCOUPLE TC1 (BLACK - LEFT FRONT BURNER)
4 - THERMOCOUPLE TC2 (BLUE - RIGHT FRONT BURNER)

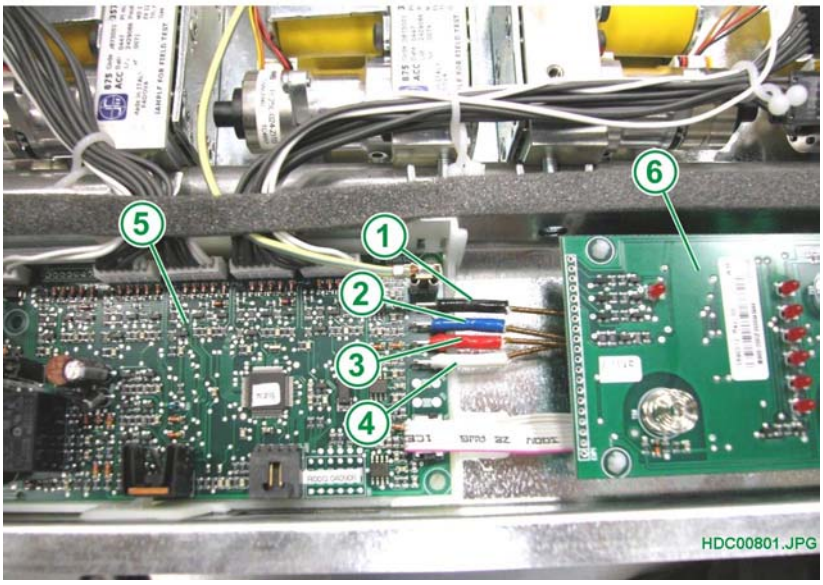


Fig. 61

1 - THERMOCOUPLE CONNECTION TC1 (BLACK - LEFT FRONT BURNER)
2 - THERMOCOUPLE CONNECTION TC2 (BLUE - RIGHT FRONT BURNER)
3 - THERMOCOUPLE CONNECTION TC3 (RED - RIGHT REAR BURNER)
4 - THERMOCOUPLE CONNECTION TC4 (WHITE - LEFT REAR BURNER)
5 - POWER BOARD
6 - INTERFACE BOARD

VIEW OF SPARK PLUG AND THERMOCOUPLE FIXING

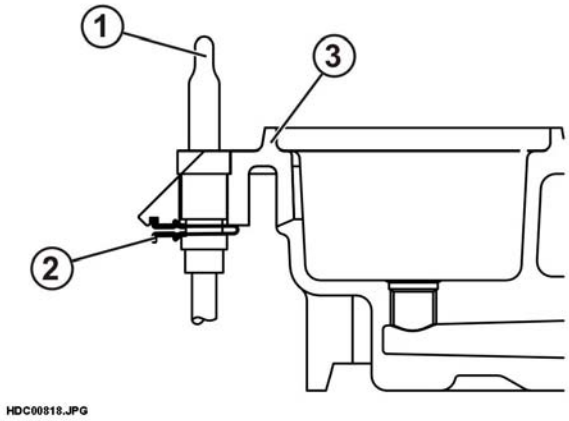


Fig. 62

1 - THERMOCOUPLE (OR SPARK PLUG)
2 - FIXING SPRING
3 - BURNER BODY

9.4.7 REPLACEMENT OF IGNITION SPARK PLUGS

To replace the spark plugs:
- Detach the connection terminal relative to the spark plug.
- Detach the spark plug removing the fixing spring placed in the lower side part of the burner.

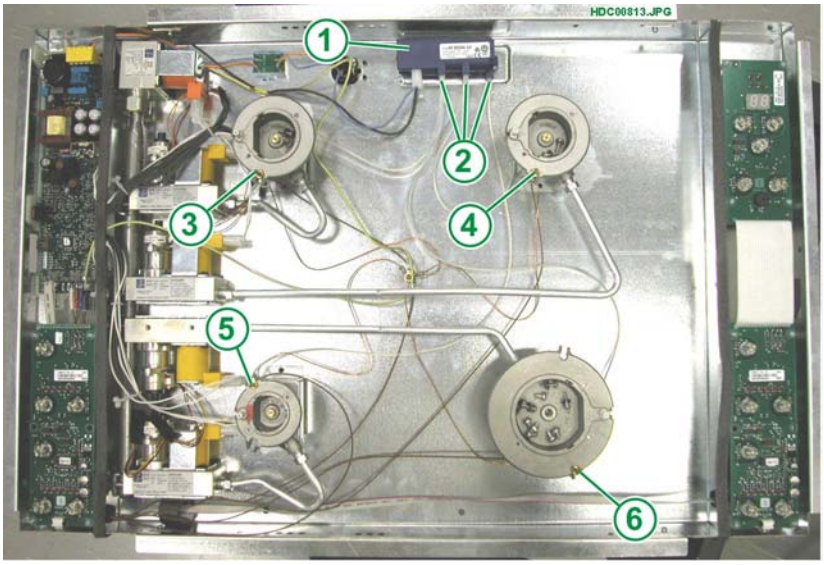
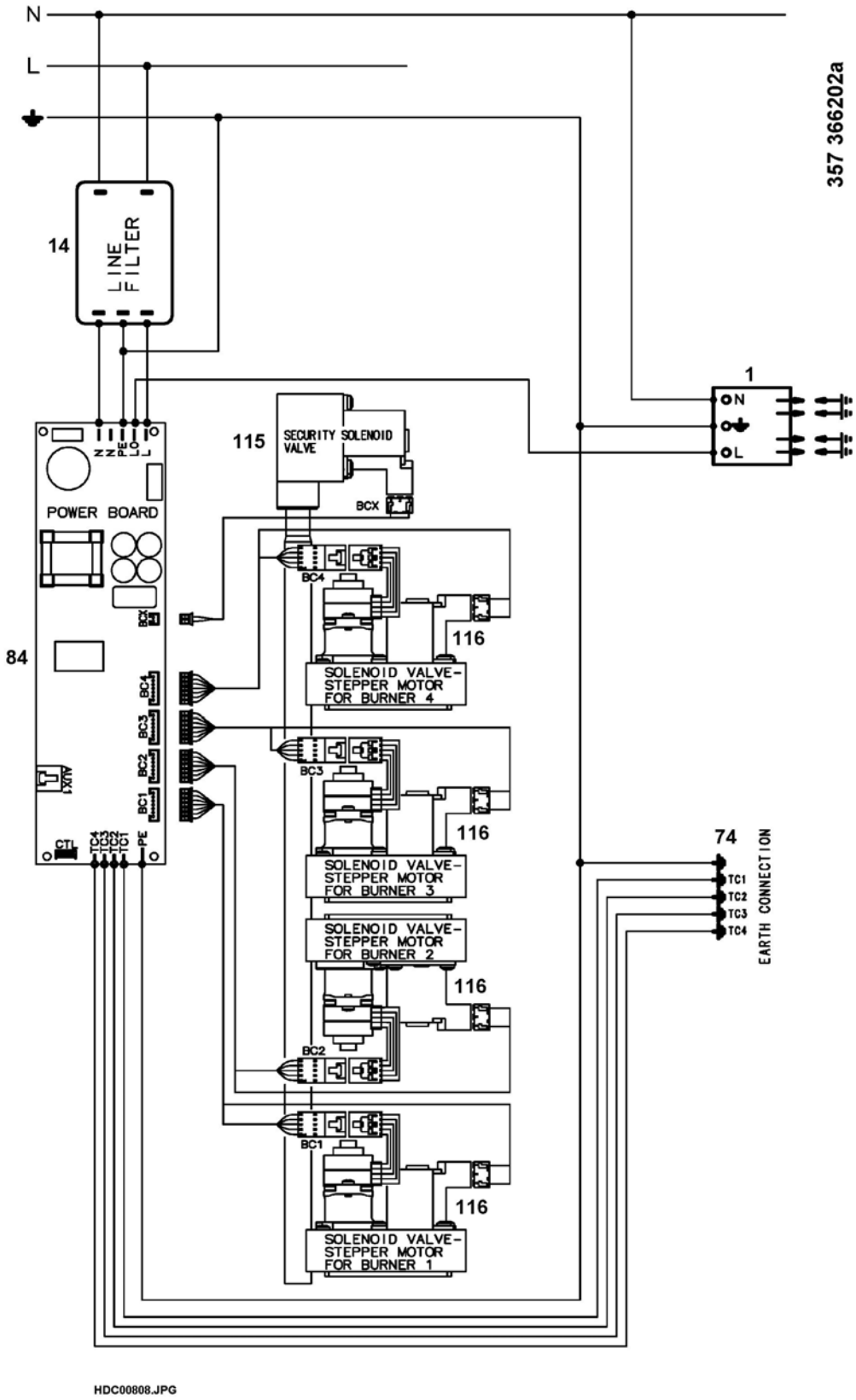


Fig. 63

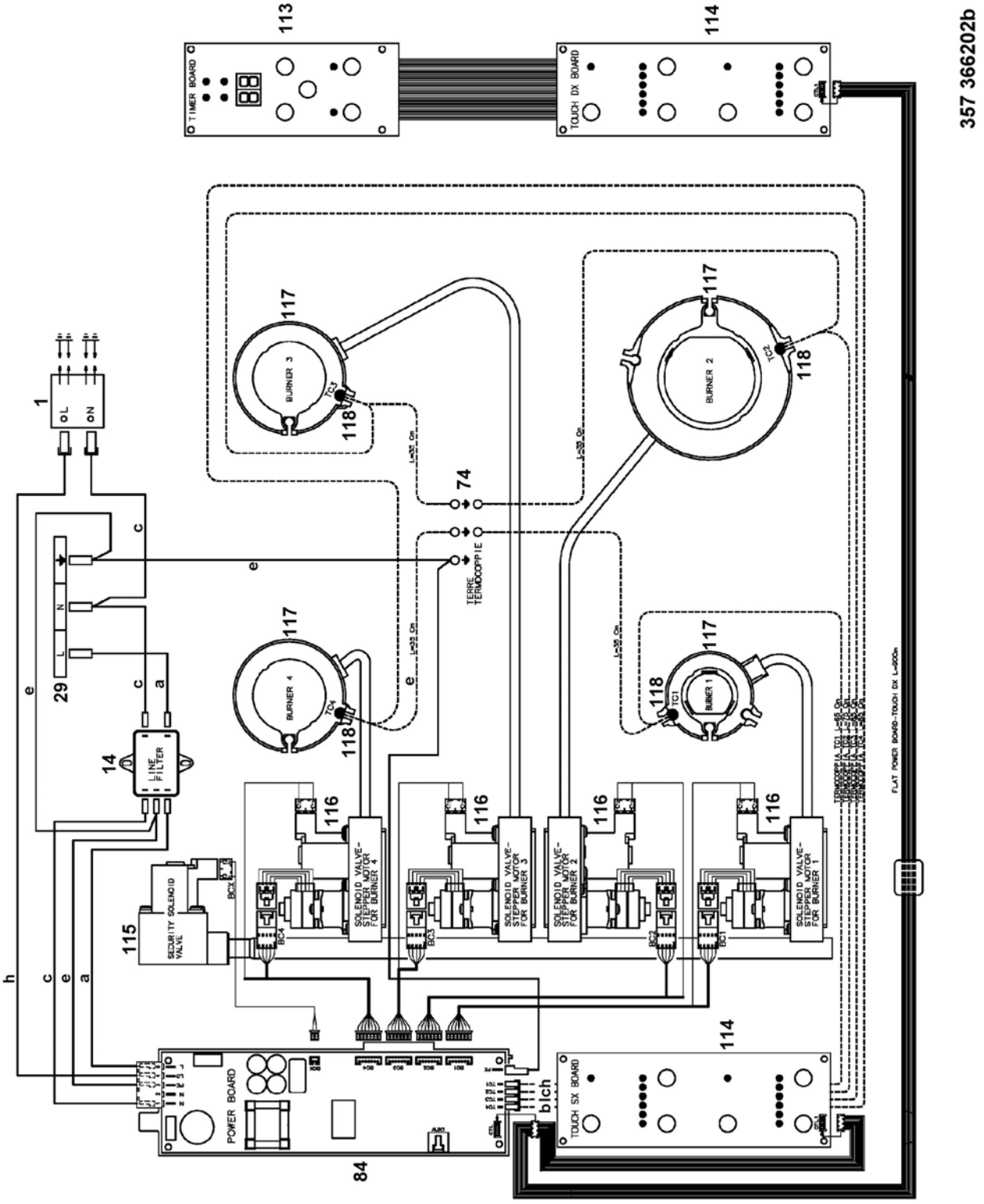
1 - IGNITER.
2 - SPARK PLUG CONNECTION TERMINAL.
3 - LEFT REAR BURNER SPARK PLUG.
4 - RIGHT REAR BURNER SPARK PLUG.
5 - LEFT FRONT BURNER SPARK PLUG.
6 - RIGHT FRONT BURNER SPARK PLUG.

10. ELECTRIC DIAGRAMS

10.1 BASIC ELECTRIC DIAGRAM



10.2 WIRING DIAGRAM



10.3 KEY TO DIAGRAM

REF	DESCRIPTION
1	Igniter
14	Interference suppressor
74	Earth
84	Power board
113	Timer board
114	Sensor control board
115	Main electric valve
116	Burner electric valve
117	Burner
118	Thermocouple